QL Today

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The Magazine about QL, QDOS, Sinclair Computers, SMSQ...

Contents

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in alphabetical order

QL Today

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We welcome your comments, suggestions and articles. YOU make **QL *Today*** possible. We are constantly changing and adjusting to meet your needs and requirements. Articles for publication should be on a 3.5" disk (DD or HD) or sent via Email. We prefer ASCII, Quill or text87 format. Pictures may be in _SCR format, we can also handle GIF or TIF or JPG. To enhance your article you may wish to include Saved Screen dumps. PLEASE send a hardcopy of all screens to be included. Don't forget to specify where in the text you would like the screen placed.

Editorial

by Geoff Wicks

9 years ago I received an unexpected telephone call from Jochen, telling me that IQLR had ceased publication. He was starting a new QL magazine and needed copy urgently.

Given the history of QL publications over the previous few years, there was little chance of that magazine succeeding. In less than a year QL World had passed through the hands of three proprietors, had struggled on for 2 more years, and had shrunk in size before finally dying. QL Review was launched, but lasted for two years before being swallowed up by IQLR, which itself died a few months later.

Contrary to the gloomy prognosis, 9 years on QL Today is alive and well. Some time this year QL Today can claim to have survived longer than any other QL publication, with the exception of the Quanta Magazine, which can boast a healthy 21 years of publication.

Jochen and Dilwyn were founder members of the QL Today team, and the QL community owes a great debt to them.

Late last month I received another unexpected communication from Jochen. This time by email, and he was wanting more than just copy. He told me Dilwyn had resigned as editor, for reasons that you will read on the next page, and asked me to take over from him.

The thought of following on from Dilwyn is sobering. His contributions to the QL community (and to the Spectrum before that) have been many and varied. I have often wondered how he could find the time and enthusiasm for all he did for the QL.

Somehow he managed to conjure up some 2000 words of QL news for every issue of QL Today. I was surprised how often a casual remark I had made on the QL-users list became a news item in the magazine. In his reports of QL shows he often put Quanta to shame by giving a more detailed account than Quanta did itself. And then there were his articles on QL history, websites and technical developments. Let's be thankful he has promised to continue writing for QL Today.

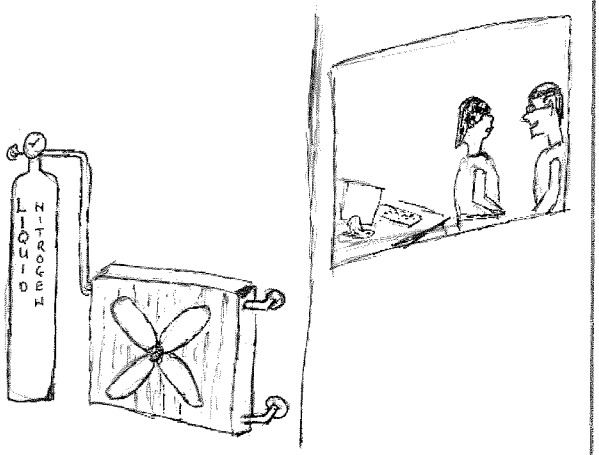
Although this edition of QL Today has my name as editor, most of the hard work was done by Dilwyn and Jochen. Indeed, as I write, I know little of the contents of this issue as I joined the team just a few days before the magazine went to press.

One of the great strengths of QL Today is that it has attracted readers and writers from all around the world. It is a tradition I hope will continue. I hope, also, that we can continue to take a broad view of the QL with articles of interest for all levels of QL use and all types of hardware and software. Even if you do not want to write an article for the magazine, we would still like to hear from you about the subjects you want us to cover. And please tell us what we do well and what we do badly.

Just a final word about Dilwyn. I predict that QL Today's loss will prove to be QL programming's gain.

Cartoon

by Roy Wood



"Dad, modern CPUs have a lot more power than your old QL you know.
They just need a little more cooling..."

The deadline for Issue 2 is the 10th of September!

Please send material in a.s.a.p. as we try to have Issue 2 ready for you at "QL is 21" in the UK

Announcement

by Dilwyn Jones

It is with regret I have to announce that due to personal circumstances I will no longer be able to edit QL Today. I am currently out of work and will have to spend my time looking for a new job in an area where jobs are hard to come by. Decent well paid jobs even harder (end of politics).

I have worked on QL Today as an unpaid volunteer editor ever since it first came out about 9 years ago. It hasn't always been easy to fill the pages, as contributions were often in short supply especially during the summer months. Hence how I came to inflict so much of my own writing on you all! Very occasionally, we actually had too much material, so we were able to carry forward to the next issue.

When I started, articles were always on floppy disk and either posted haphazardly to Jochen in Germany, or occasionally sent by international phone call to Jochen's bulletin board for Jochen to lay out with his DTP program Calamus (I think we called it Calamity sometimes, or was that just Jochen's typing?). During more recent years, email made the job of communication easier and cheaper – working on a magazine from two different countries wasn't always as easy as it is nowadays!

For years now, the QL has been a hobby and not a source of income for me. To be honest, I've enjoyed it much more since it's been that way. Some of you will remember me from the days when I traded as DJC and I nearly gave up on QLing after DJC ended – it had been an awfully unhappy period in my life after the death of my first child and my first marriage breaking up soon afterward. What kept me going was the spirit of friendship in the QL community. We were a small community but I had made so many friends through the QL and it seemed wrong to throw all that away. When you make friends like Jochen Merz and Darren Branagh, to name just two people, you do not turn your back on them just because you decide to end a business. It's been almost like a joke, "There was a Welshman, an Irishman and a German..."

So I carried on enjoying myself writing programs, using the QL, visiting QL shows etc until a chance conversation with Stuart Honeyball of Miracle Systems revealed Jochen Merz was starting a new QL magazine after IQLR finished. Somehow, I sort of got volunteered to be editor, a task I saw as short term in those days until they found someone better qualified and somehow I ended up editing it until now. If it was monthly, like Quanta newsletter was at the time, I wouldn't (couldn't) have done it. Bi-monthly suited me better.

What amazed me up to 20 years after the QL first came out from Sinclair was how much news material we had every month. Never much problem filling up the news columns. Even now.

For me, recent milestones were:

- the QL users email mailing list which kept us all in touch across national boundaries
- development of QL emulators and production of the Q40 (much more so than the ill-fated QXL)
- the release of major modern QL software like Q-Route, Line Design, ProWeSs, Launchpad and QDT
- the colour drivers, sound facilities and so on
- the new Window Manager and operating system development generally
- programming utilities like TurboPTR and the new Easyptr which make it so easy to write software.

Plus of course seeing a young and talented person like Marcel Kilgus become the successor to operating system designer Tony Tebby in all but name. Without people like Tony Tebby, Marcel Kilgus, Laurence Reeves, Miracle Systems and many names from the slightly more distant past the QL may well have become extinct after Amstrad pulled the plug in the 1980s. Instead, twenty years on, there is still a viable if small and friendly QL community. Long may it last. Small is beautiful (hence why I'm so ugly...just thought I'd get that one in before Roy Wood says it!)

People like Norman Dunbar, Geoff Wicks, Herb Schaaf and others provided such a regular flow of material for QL Today I'll never know how to thank them enough. I hope they all continue even if I am not there to twist arms from time to time!

Special thanks to someone whose name you may not know so well. Bruce Nicholls. As co-editor, he has proof read QL Today behind the scenes and so much of his work never sees the headlines. Whether it be his past activities with QReview magazine, selling software via Quo Vadis Design, helping Quanta with websites and so on and probably his single outstanding contri-

bution to the QL scene, the QL-Users Email Mailing List, Bruce is one of those quieter workers who stays away from the limelight but his contribution has been immense. And Roy Wood. I've been the butt of many of his jokes in his Bytes Of Wood column, but as someone who came to the QL scene as a trader fairly late in the life of the QL, he too has made an enormous and ongoing contribution, present at just about every QL show in recent years. Roy was rarely afraid to say anything which needed saying and yet hardly ever fell out with anyone.

You probably haven't seen the last of me! Depending on the how the work situation develops I'll certainly be writing from time to time. I hope to get time to write more QL programs, since writing software is my favourite pastime. The websites will continue to provide free information and software downloads while I can afford to keep them going. After 20 years, I can't imagine a life without a QL and I can't imagine a life without the many friends I've made through the QL so there will always be a QL or QPC in use in this house! You may well find that as I settle into a new job and without the demands of being editor you may have to suffer more software, articles and websites from me (I can hear the collective "oh nos" already!).

I hope to be able to see you all at "QL is 21" later this year assuming I'm not still looking for work by then!

Thank you all. Dilwyn Jones

News

JDH Software Technologies Has Gone Canadian

I am now located in the beautiful city of Toronto, Canada after recently driving across the North American continent (4500 km) from the west coast of the US – just one province short of the Atlantic ocean. I am now over-employed as an architect by ATI, one of the two major graphics companies in the high tech industry.

This is the reason for the long delay in the next major upgrade to QDT. For those who are wondering, QDT development should be back into normal schedules by the time this news brief is read. My first major project for ATI (CrossFire for those graphics fans) should be into production by the time this is read which will allow me to adopt the Canadian life style – evenings and weekends not in the office!

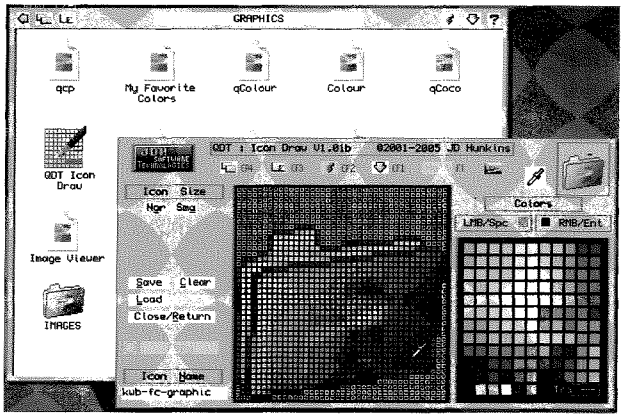
To let everyone know the plans for the next release (they have changed due to the feedback that I have received from several users):

- IconDraw : [completed] now has changeable background colors, faster icon redraws, a color picker so that you can pick any color from the current icon image (saves a lot of guessing), and some minor enhancements
- Drag&Drop : [development started] first pass will allow moving objects between folders
- FileManager Object : [planning started] will open just like any QDT object but will represent actual files and directories on a disk. Will be supported by Drag&Drop, including a Drag&Drop option to make a normal object from (similar to an alias)

IconDraw and Drag&Drop will come out first, with the FileManager second. There will be some other small enhancements. After that I will resume work on the notebook capabilities.

Since there has been such an unexpected gap in the QDT development due to my job and location change, I will be considering the extension of free upgrade period to allow for the development of the pieces originally presented. The final decision will be made on this as I see how much progress is made over the next six months.

Cheers from Canada! Jim Hunkins



IconDraw Update Image: includes the color dropper to capture colors (see lower right corner of main icon image) and changeable background colors for the real time icon image.

SMSQ/E and Pointer Environment

SMSQE version 3.10 is out and should be with your resellers now.

The source can be obtained from me via CD or from the website:

www.scp-paulet-lenerz.com/smsqe

The latest files for the pointer environment (ptr_gen, wman and hot_rext) can be found at the Wolfgang Lenerz Smsqe website:
www.scp-paulet-lenerz.com/smsqe
follow the link to additional info & data.

Current and selected past versions of the PE files are also available from Dilwyn Jones's web-site at:
http://homepages.tesco.net/dilwyn.jones/pe/pe.html
The older versions have been made available to help software authors with testing software against earlier versions of the pointer environment.

Darren Branagh Contact Details

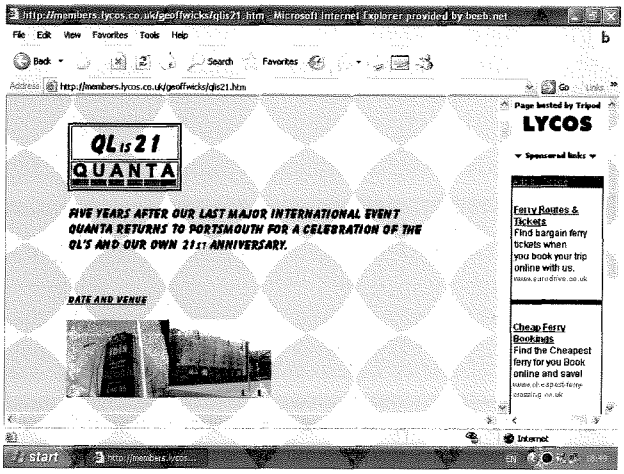
I am still getting emails to my old o2 email address - while this is still active, and will continue, I only check it maybe twice a week at best, due to the fact I have no phone line at home, and rely on a GPRS/Bluetooth link from my laptop to my mobile phone for email and internet access at home (very expensive - so only used in emergencies!)
Therefore, for a much speedier response, use this email address:
dbranaghA@cmsperipherals.com
This email is checked constantly daily weekdays while at work, 9am-5.30pm.
I am also still getting some snail mail to my parents address in Wicklow. Again, this will get to me, just more slowly as it needs to be forwarded. My new postal address, for the foreseeable future, is:
Darren Branagh, Gortnaclassa, Cong, Co.Mayo. IRELAND.

Marcel Kilgus Website Update

I'd just like to inform you that a somewhat bigger update has happened to www.kilgus.net.
QPC: New SMSQ/E, new manuals, new demo hard disc(!) read to check out, more utility software
QPCPrint: New QPCPrint section including free demo to check out
SMSQ/E: new version of sprite converter that can produce solid sprites (sprite without a mask, i.e. just a pattern). This format is drawn more rapidly and produces much smaller files, good for big images within menus and the like or even images in general. Only supported from SMSQ/E 3.10 onwards (or more specifically PTR CON driver 2.02).
Any feedback, especially regarding the demo hard disc, is appreciated.

QL is 21 Website

The "QL is 21" show web page is now online:
http://members.lycos.co.uk/geoffwicks/qlis21.htm



Turbo Compiler

George Gwilt has produced a version of Turbo which allows slicing of arrays used as parameters of machine code extensions.
Please note that the old version of Turbo has been placed on the site as the previous version had a problem with passing string parameters by reference causing erratic problems with SMSQE and more serious ones with QDOS Roms.
It is not yet known whether the same problems exist with Minerva or Classic ROMs and if somebody can test by using Charge with version 10, George Gwilt and John Sadler would like to know.
There is an experimental version on the site Tr421k which we would appreciate being tested.
www.jms1.supanet.com

After-Glow Show Photos

Tony Firshman writes:
Here is the address to see photos from the After-Glow Show in Eindhoven, uploaded via the internet connection at the show:
http://firshman.co.uk/photos.htm

London and Byfleet Shows combine

Ken Bain and Malcolm Cadman write:
This year London QL and Quanta Group and Surrey Quanta Sub-Group are jointly presenting Byfleet 2005 QUANTA Workshop on Sunday 25 September, 10 until 4. in Byfleet Village Hall.
This is instead of two separate September shows. We look forward to seeing you.
More information on **www.sadeye.co.uk**

QLCF Software Library

Jérôme Grimbert writes:

Part of the QLCF (QL Contact France, the French group) software library is now available on the web. The address is **http://jgrimbert.free.fr/galerie**

"Part": only the non-French part is available to unregistered/anonymous users. The French part is only available to a selected few. (due to legal restriction of the license under which contribution are received, you have to be a member of QLCF to get access to it. The sad point so far is that QLCF has stopped taking new memberships...)

I hope to update it soon, as so far it's only up to 2000 status. (Well, most update since happened in the french-part, so that's not really a concern for most readers... yet!) Then I should start documenting more explicitly the content of each zip archive (so far, it's a bit of random picking amongst the hundreds of available zip files...)

I intend to grant access to the 'restricted' area on the following basis (still open to discussion with any QLCF members, I know some of them are reading this list): - you are on the official list of members, - or you donate a useful and new contribution (as QL software, no money!) to the library.

In both cases, you should first register, then email the webmaster with the detail of your registration name, and either your true name (case 1) or your contribution (case 2). Then manual processing will occurs (that means, it can take upto a month (holidays!!!) before you get an answer.

For instance: SBasic keyword extensions should be documented with either a quill document, or a bare text file, source file should be provided as well as binary. A loading boot file might be provided too, as well as a demonstration of use. All these files should have the same name, but a different suffix.

QXL.WIN Manager

Version 1.02 of QXL.WIN Manager is now available from

www.dilwyn.uk6.net/files/index.html

This program is a utility for QPC2 users to help with setting path names for the WIN and DOS drives if you frequently need to alter the settings on the fly, e.g. if you use multiple QXL.WINs on your hard disk to hold copies of QL CDs.

This latest version can be configured to use System Palette menus so as to make better use of high colour and new Window Manager facilities.

Promises, Promises!

by Geoff Wicks

Making promises is easy. Keeping them is difficult.

If you look at the shows information at the back of this magazine, you will see Quanta's bold promise about QL is 21, "Quanta is planning activities to suit all levels of QL-use from simple black box to the latest technologies".

I wonder whether we will keep this promise. After all, I am the person who wrote it.

Let's take a closer look at the challenge. At the end of last year Quanta organised a survey of QL use. Well over half of the people who replied to the survey were Quanta members, and they represented about a quarter of Quanta membership. This was a response that would make professional market researchers, who normally get at best a 5% response, go green with envy. It has given the Quanta committee a clear picture of its members together with some surprises.

I have not seen the raw data of the survey, but write from the notes I made at the Quanta AGM and committee meetings. About three quarters of QL-ers use an emulator and two thirds of these are QPC users. In other words almost half of QL-ers use QPC . 17% possess either a Q40 or a Q60. A half possess a Super Gold Card. Two thirds can use a mouse and a half a hard disk.

But one figure has amazed the Quanta committee. A quarter of Quanta members are simple black box users, and some are still using microdrives. John Southern, who inspired the survey, told the AGM that many of these users were angry. They felt they were on their own with nowhere to turn for help. The content of neither the Quanta magazine nor QL Today addressed their needs.

Black box users are frequently called Luddites who contribute nothing to the QL community in the columns of QL publications, the email users group and general gossip.

Contribute nothing? NOTHING? Factually they contribute a quarter of Quanta's income and without them Quanta would be much the poorer, and not just in a financial sense.

The most ambitious show Quanta has organised for five years must be a show for all its members and that is why I made the promise I did.

The easiest part of planning a show programme is to look at the latest technology and plan activities around that. There is plenty that has happened over the last few years to fill a day's activity, although, as I write this, not a single person has volunteered to present them. We have up to 11 hours of activity time at Portsmouth. Do you really want to listen to me talking for 11 hours on subjects I know little or nothing about?

So here is my shopping list for the technical side of QL is 21.

INTERNET: For years we have talked about wanting QL internet and email access. Over half of QL-users now have it, but who will demonstrate and talk about it? We need someone who has experience of QL-Lynx. Is there any one working on an QL HTML viewer or browser?

NEW COLOURS: We have had the new colours now for almost 5 years, but not once has there been a talk or demonstration of them at a UK show. If necessary I can do this item myself. My message will be that any one who has written even the simplest of SuperBasic programs can now program in the new colours.

SOUND: QPC and Q60/40 users have access to much improved sound facilities which are now being used in some games to good effect. Sound has not had much attention in QL publications, and probably few of us have any idea to program the new sounds. Could any one give a technical presentation of the new sound facilities and also help us on sound file sources?

Q60/Q40: In my opinion this is a neglected area of the QL. Would Q60/Q40 users like to get together to discuss mutual problems and experiences? Who would like to lead such a group?

QDT: A major development in the last 12 months and inevitably a complex program. We can approach this subject in a number of different ways. Who will give a presentation and who will help users who are having difficulty in installing and configuration?

EASYPTR: We've moaned long enough for an upgrade and now we have got it. How many of us are rescaling windows or using the new

colours? What problems do we have? Who will lead an EasyPtr group? And talking of pointer programming some interesting things have been happening to the Turbo compiler, once spurned by pointer programmers, that could make QLiberator obsolete.

SPRITES: Another subject that most of us know little about. Much the same considerations apply as to Sound and EasyPtr use? The clue to future QL software could lie in our programmers becoming skilled in the use of all these.

HARDWARE: This is always a good crowd puller and a subject I know almost nothing about. Fortunately I know the right arms to twist.

Quite an impressive list and I have not even begun to think of topics for the black box users. Once again it is useful to look again at Quanta's survey.

What do people do with their QLs? For 67% it is a hobby. 25% have a business use and 15% an interest in games. Most QL users will have a printer and we all know the problems we have with those.

I gained some insight into black box users a few years ago when several enquired about using QL-2-PC Transfer because they wanted to move their QL files to a PC. Although they were unsophisticated in their QL use, they were still doing clever and interesting things with their machines. One was writing a history of Polish units in the airforce and another was making a study of Arctic explorers. The QL community has always had skilled writers in its midst, some working for broadcasting organisations, and others who, until they retired, had held highly skilled jobs. I even renewed an acquaintance with someone I first met over 40 years ago, and who has done much to keep alive the traditions of the English music hall. The QL community has always had family historians in its midst. Another of my programs, QL-Rhymes, has had few buyers, but is used enthusiastically for writing everything from rock lyrics to anti-abortion songs. The QL has always been a computer for niche interests.

This means there should be no lack of non-technical subjects of interest to QL users:

PRINTERS: Strictly speaking this is a technical subject, but we all have to use a printer and the printer problem affects us all. Recently a solution for QPC users has come in the form of QPC Print, but I suspect there are many people who have some difficulty in understanding the ideas behind QPC print and who may have problems in installing and using the program. Would a printer workshop be a good idea?

BUSINESS USE: Quanta's survey showed that a quarter of users put the QL to business use. There are examples of people running their businesses on the QL or even using a QL to control industrial processes. Again this could be a theme for a workshop.

NICHE AND UNUSUAL USES: QL's are used in the pursuit of many hobbies and other interests. You also hear of occasional unusual uses. For example, controlling thermal panels, running Lego models or monitoring an egg incubator. In fact the ease of programming SuperBasic makes it much easier to use a QL than a PC for these purposes. Do you have an unusual use for your QL?

GAMES: The new colour and sound facilities have given a new lease of life to QL games. Even the most diehard black box user could be impressed by QWORD, BALLED and D-MINER. Would someone like to present an interactive games session?

PC HARDWARE: A recent suggestion that has come my way is help with upgrading and installation for black box users who want to move on to a PC and QPC 2. We have not yet explored the market to see if there is sufficient demand, but the idea has promise.

QUANTA: The Quanta committee do not know this yet, but I might just suggest that much of the Sunday morning could be devoted to Quanta matters. Quanta has announced plans for changing its magazine to A4 format, going over to electronic publishing, and redesigning its website. This should give plenty of material for members to discuss.

Looking at this list there are more than enough topics to cover the 11 hours of activity at QL is 21. Indeed at QL2004 we ran short of time to do everything we wanted. Unfortunately in the UK we have lost the skill of running activities at shows and of helping QL users with general problems. This is what we have to relearn at QL is 21. So who is prepared to offer their services as presenter? Or do you really prefer to listen to me talking about things I know little about for up to 11 hours? Well to be truthful it will now only be 10 hours. Since I started writing this I have had my first volunteer. Only 10 more to go!

Gee Graphics! (on the QL ?) – part 43

by H.L. Schaaf

Where's my (tinfoil?) hat? Has Microsoft ursurped the power?

It seems that Windows XP uses CHR$(94), aka circumflex, hat carat, wedge, "^", etc. as an ESCAPE character, similar to the way we use "\" in C programming. This is to make it easier for people to use accented characters with graves, umlauts, acutes, tildes, and of course the circumflex.

Just curious: what do the following look like?

```
a ^a 'a |a "a ~a A ^A 'A |A "A ~A
e ^e 'e |e "e ~e E ^E 'E |E "E ~E
i ^i 'i |i "i ~i I ^I 'I |I "I ~I
o ^o 'o |o "o ~o O ^O 'O |O "O ~O
u ^u 'u |u "u ~u U ^U 'U |U "U ~U
n ^n
```

Editor: well, it probably depends on the keyboard and version of Windows used. On a German keyboard, typing ^ and a results in â, some for o and u. I and a vowel - what else would you expect to get except for these two characters? You cannot construct äöü on a German keyboard as far as I am aware - no need to anyway as we have special keys for that.

Hard to figure why the "^" is missing in line 180 on page 11 of the listing in GG#42, but does get printed later in lines 380, 390, 530, 580, and 1380 on the following pages. Now that I look at the listing, it seems the ‹ ^ › characters are almost not there. Might there be a stronger font? Also curious as to what word processing program(s), telnet(s), etc. are used between Jochen, Dilwyn, and the print shop of QLToday. There's probably a windows XP or NT in there somewhere. Etymology of the word caret says its roots meant 'something missing'. Curious coincidence?

Editor again: I am using a fixed size typewriter type font which is supposed to give strong characters print. The characters did not get lost this time from your email into Calamus, so it might be the email client you use(d?). Well, I just discovered that some characters get converted inside Windows, when I put the text into Notetab.

Notational style? Minding my p's and q's, etc.

Some conventions use i, j, k, l, m, n only for integer variables and use the other letters for real (floating point) numbers. This (in upper case) was standard Fortran practice. Then too Fortran and Sinclair ZX-81 used ** for exponentiation. Trigonometry likes a, b and c as well as A, B and C. Algebra likes x, y, z for the unknowns. Math uses i and j for indexing in iterations and matrices, and also for the square root of -1. Electrical engineers use j and save i for I = E/R. Why use I for current in Amperes, E for potential in Volts, and R for resistance in Ohms (Greek letter Omega)? Then too there's a rich mix of Greek, Fraktur, Hebrew and who knows what other squiggles and symbols in mathematics. 'Consistency is the hobgoblin of small minds'.

The nice thing about standards is that there are so many of them. Tom Jennings
http://www.wps.com
has some variants in his "History of character codes".

For another look at how complicated it can be check out MathML, the mathematical markup language. Try
docs.mandragor.com
with mathML as a search term, and check out Stephen Wolfram's talk at
www.stephenwolfram.com/publications/talks/mathML
Jeff Miller
members.aol.com/jeff570/mathsym.html
gives historical examples.

This time I hope you will be able to reuse some of the material from previous GG's. It will involve cut, edit, renumber and merges. Good luck.

```
Load, Delete, Edit, Renumber, Save, etc. list
for GG#43

GG#38 v.9 n.1 May/June 2004 p.9
   LOAD Gamma_Allard_bas
      DLINE TO 170, 630 TO
   insert Lines
      175 DEF PROCedure  set_Gamma_coef
      305 END DEFine
```

```
   add Local variables TO Line 330
      330 LOCal ix, a, b
   RENUM 7500,10
   SAVE 'GG38_part'

GG#39 v.9 n.2 July/Aug 2004 p.8
   LOAD GaussLegendreQuad_bas
      DLINE TO 400, 800 TO 920, 980 TO
   RENUM 8000,10
   SAVE 'GG39_part'

GG#42 v.9 n.6 Mar/Apr 2005 p.11
   LOAD GHS_bas
   DLINE TO 350, 910 TO 1000, 1200, 1340 TO
   1400, 1430 TO
edit Lines
   630 PAPER 0 : INK 7 : CSIZE 0,0
   670  CURSOR I,0,-4-(I=10)*2,4 : PRINT I
   690  CURSOR 0,I-10-(I=10)*6,-4 : PRINT I
add Lines
   715 CURSOR 0,0,0,0
   742  IF (can_useGamma) THEN
   744   sum_h = use_Gamma
   746  ELSE
   875  END IF
On Lines 1210, 1230, 1250, 1270 change  INPUT
to INPUT #0;
   RENUM 9000,10
   SAVE 'GG42_part'
```

These parts are to merged with the Listing for this GG#43

I realize how confusing it must be for others when I have a hard time following my own muddle of mucked about programming. I'm not ready for Hungarian or Croation notation, but I need to think about a better way so I can 'maintain?' my own 'code'.
REMarks are most helpful and I should use many more of them. Instead of using n and m which imply integer exponents perhaps I should have used p and q which are thought of as any number.
We could also add the percent sign % to signify integer.
My notation and 'style?' leave lots of room for improvement.
Time to review the "Elements of Programming Style" gift from Tim Swenson.

For clever suggestions look at
mindprod.com/unmain.html
to see how to confuse future readers of our code.

For the area under the Lame curve we've found the Hypergeometric series works as a good approximation. But it was slow in some cases.
Gauss (in 1812) gave us a faster way to get the same answer (under certain conditions) by using the Gamma function. The GHS function has been modified to make use of Gauss's summation theorem whenever we can.

On to the arclength of a Lame curve

We struggled and eventually came up with a derivative for the Lame curve. If you are comfortable with calculus, see what you get and compare it to what I'm using.

Theory says we can get arclength by:
1) squaring the derivative
2) adding 1
3) taking the square root
4) integrating (???)

I don't know how to do the integration, but there may be a 'substitution' method that makes it simple. Please tell us if you know of one.

Instead of integrating I use Gaussian quadrature for a good approximation and get agreeable answers. What's agreeable and how do you get the QL to tell you? A work-in-progress that needs a robust rounding function, any suggestions?

Another 'slant' on getting the arc length of Lame curves.

Tell all the Truth but tell it slant
    Emily Dickinson (1830-1836)
Tell all the Truth but tell it slant---
Success in Cirrcuit lies
Too bright for our infirm Delight
The Truth's superb surprise
As Lightening to the Children eased
With explanation kind
The Truth must dazzle gradually
Or every man be blind---

We can use the diagonal from 0,lamb to lama,0 as a base line, and then do Gaussian quadrature to see how much area is to be added or subtracted from that triangular area between the diagonal and the x and the y axes. Perpendiculars from the diagonal to the Lame curve are shown in red or green depending on whether the x or y makes a better fit. The distances from the diagonal to the Lame curve are used with the GRULE data to find a 'slant' based area. By applying the 4-step arclength method as we go along we also obtain a 'slant' based length.
Using the diagonal as a base line avoids extreme end slope conditions.

Another approach to avoid extreme slopes is to break the curve into regions and then 'box' them in.

We examine the curve to see which regions are more nearly 'flat' than 'vertical' and vice-versa. Gaussian quadrature for the flatter regions are done along the x-axis, and for the steeper regions are done along the y-axis. We examine the curve and when we find the slope is -1 we set that point as a 'knee'. We then have 2 to 3 regions to deal with. Each region is treated separately, and the results are combined taking into account any overlaps and/or gaps to calculate the area. The buildup is shown as red vertical lines when along x, and green horizontal lines when along y.

If there are overlaps (duplicated areas) one of them needs to be removed, and if there are gaps (missing areas) they need to be added. We use gold to indicate overlaps, and pink for gaps.

ZeroIn finds the point where a function crosses the x_axis. It was developed in the Netherlands by Wijngaarden, Zonnevald and Dijkstra during the early 1960's and perfected by Brendt in 1973. It was analysed in 1997 by Clayton, Rugaber, and Wills at the Georgia Institute of Technology in "On the Knowledge Required to Understand a Program". I now offer you a QL version of this 'geriatric' code. This looks to be useful for reuse later. Enjoy!

Merge GG38_part, GG39_part, GG42_part, and GG43_part to create GG43_bas. The program asks for input as before, then works out the area and length. For graphic pizzazz(?) it displays the curve, and shows the slant line projections to the curve, finds the 'knee' points, shows the boxes, and compares the answers for agreement. If the input is 1, 2/3, 10, 10 the area is 40. If the input is 1, 3/2, 10, 10 the area is 60. If the input is 2,2,2,2 all the answers are PI. Go ahead, push it to the limits, and tell us what you find of interest.

Next? - How to find Lame curves with same area, or how to find Lame curves with same length, but with differing parameters.

And? - Are there Lame curves where the arclength is equal to the area other than $(x/2)^2 + (y/2)^2 = 1$? (do the ')'s have a caret after them?)

Editor: Well, they had - and calamus converted it automatically to ^2, but I manually converted it back.

Listing ..... for GG#43

needs merged material from past GG's

```
100 REMark GG43_part
110 REMark merge with GG38_part, GG39_part,
    GG42_part
120 REMark and rename as GG43_bas
130 REMark HL Schaaf June 7, 2005
140 REMark for GG#43 Lame curves
150 WMON : INK  7: PAPER 0: CLS
160 INK #2,7:PAPER #2;0 : CLS #2
170 :
180 eps = 2^-31
190 tol = eps : REMark is 2^-25 better ?
200 REMark set up coefficients
210 n = 42 : GRULE(n) : REMark Gauss-Legendre
220 set_Gamma_coef : REMark for Gamma function
230 :
240 CLS#2 : get_Lame
250 makegrid : show_Lame
260 PRINT #2;'Area based on GHS:'
270 get_GHS
280 slant
290 box
300 shape
310 recap
320 qnext
330 :
340 DEFine PROCedure slant
350  INK  7 :  POINT  0,lamb
360  LINE TO lama,0
370  tri_area = (lama*lamb)/2
380  di_len = SQRT(lama^2+lamb^2)
390  slp1 = - lamb/lama
400  slp2 = - 1/slp1
410  PRINT #0;'using GRULE on slant '
420  sl_area = grule_slant + tri_area
430  sl_leng = s_leng
440 INK  #2;7
450 PRINT #2;'sl_area = '; sl_area
460 PRINT #2;'sl_leng = '; sl_leng
470 PRINT #2;
480 END DEFine slant
490 :
500 DEFine PROCedure box
510 REMark this finds area and length
520 REMark using boxs and segments
530 IF (lamn=1 AND lamm=1) THEN
540 REMark straight line
550  gb_area = tri_area
560  gruledsum = tri_area
570  gb_area = tri_area
580  sl_leng = di_len
590  gb_leng = di_len
600  shape$ = 'No curve '
610 ELSE
620  vorh = 0
630  PRINT #0;' looking for knees '
640 REMark  finds where slope is -1
650  any_knees
660 REMark convert string into arrays
670  PRINT #0;' parsing segments '
680  parseknees
690  fillboxes
700 END IF
710 END DEFine box
720 :
730 DEFine PROCedure shape
740 REMark convex shape
750  IF (lamn>=1 AND lamm>=1) THEN
760   gb_area = gruledsum-bxs(2,5)
```

```
770   shape$ =  'Convex'
780  END IF
790 REMark concave shape
800  IF (lamn<=1 AND lamm<=1)
810   gb_area = gruledsum+bxs(2,5)
820   shape$ =  'Concave'
830  END IF
840 REMark ogive shape, Z or S
850  IF bxs(3,5) THEN
860 REMark Z shape relative to diagonal
870   IF (lamn>1 AND lamm<1) THEN
880    shape$ = 'Z shape '
890    gb_area =  gruledsum-bxs(2,5)+bxs(3,5)
900   END IF
910 REMark S shape relative to diagonal
920   IF (lamn<1 AND lamm>1) THEN
930    shape$ = 'S shape '
940    gb_area =  gruledsum+bxs(2,5)-bxs(3,5)
950   END IF
960  END IF
970  IF DIMN(pts)= 2 :gb_area = gruledsum
980 END DEFine shape
990 :
1000 DEFine PROCedure recap
1010 INK #2;7
1020 PRINT #2;\, 'Shape is '&shape$
1030 PRINT #2;\,'GHS area = ';ghs_area
1040 PRINT #2;\'  Grule boxed: '\,'Area = ';
1050 PRINT #2;gb_area\,'Length = ';gb_leng
1060 PRINT #2;\'  Slant based:'\,'Area = ';
1070 PRINT #2;sl_area\,'Length = ';sl_leng
1080 PRINT #2;\'  Agreement in length'
1090 PRINT #2;,agree(sl_leng,pts(0,0));
1100 PRINT #2;' digits, slant & boxed ';
     agreenum
1110 PRINT #2;\'  Agreement in area'
1120 PRINT #2;,agree(gb_area,ghs_area);
1130 PRINT #2;' digits, boxed & GHS ';agreenum
1140 PRINT #2;,agree(sl_area,ghs_area);
1150 PRINT #2;' digits, slant & GHS ';agreenum
1160 PRINT #2;,agree(gb_area,sl_area);
1170 PRINT #2;' digits, boxed & slant ';
     agreenum
1180 PRINT #2;
1190 END DEFine recap
1200 :
1210 DEFine PROCedure qnext
1220  INK #0,7 : CLS#0
1230  PRINT #0; '[R]epeat,[C]hange,[S]ave
      screen,[Q]uit ?'
1240  REPeat whatnext
1250   ans$ = INKEY$(-1)
1260   IF ans$ =='r':EXIT whatnext
1270   IF ans$ =='c':EXIT whatnext
1280   IF ans$ =='q':EXIT whatnext
1290   IF ans$ =='s':EXIT whatnext
1300  END REPeat whatnext
1310  CLS#0
1320  IF ans$ == 'r' : CLS#2: GO TO 250
1330  IF ans$ == 'c' : CLS#2: GO TO 240
1340  IF ans$ == 's' : savescreen
1350  IF ans$ == 'q' : STOP
1360 END DEFine qnext
1370 :
1380 DEFine PROCedure savescreen
1390  SBYTES_O ram1_L_scr,2^17,2^15
1400  PRINT #0;'saved as ram1_L_scr'
1410  PAUSE
1420  qnext
1430 END DEFine
1440 :
1450 :
1460 DEFine FuNction diag2Lame(xs)
1470  ys = slp1*xs+lamb
1480  yint = lamb +xs*((slp1-slp2))
1490 REMark ys is y-value on diagonal @ xs
1500 REMark yint is intersection on the y-axis
1510 REMark of the perpendicular to the
     diagonal.
1520 REMark find best x fit
1530  lx = xs
1540  hx = invf(ys)
1550  call$ = 'x_fit'
1560  xc_x = zeroin(lx,hx,0)
1570  xc_y = f(xc_x)
1580  xdfl = SQRT((xc_x-xs)^2 + (xc_y-ys)^2)
1590 REMark find best y fit
1600  ly = ys
1610  hy = f(xs)
1620  call$ = 'y_fit'
1630  yc_y = zeroin(ly,hy,0)
1640  yc_x = invf(yc_y)
1650  ydfl = SQRT((yc_x-xs)^2 + (yc_y-ys)^2)
1660  abxd = ABS(xdif(yc_y))
1670  abyd = ABS(ydif(xc_x))
1680 REMark which has best match ?
1690  IF abyd < abxd THEN
1700   abd = abyd
1710   c_x = xc_x : c_y = xc_y
1720   dfl =xdfl
1730   color = 4
1740  ELSE
1750   abd = abxd
1760   c_x = yc_x : c_y = yc_y
1770   dfl = ydfl
1780   color = 2
1790  END IF
1800 REMark show Grule points on curve
1810  INK 242 : CIRCLE c_x,c_y,.1
1820 REMark show points on diagonal
1830  INK 2 : CIRCLE xs,ys,.1
1840 REMark show line from diagonal to curve
1850  INK color
1860  LINE c_x,c_y TO xs,ys
1870  INK 7
1880  sdfl = 0
1890  IF c_x>xs OR c_y>ys:sdfl = 1
1900  IF c_x<xs OR c_y<ys:sdfl = -1
1910  the1 = ATAN(Lamdy(c_x))
1920  the2 = ATAN(slp1)
1930 REMark signed distance
1940  sdfl = sdfl*dfl
1950  slantslope = TAN(the1-the2)
1960 REMark  arclength factor
1970  alf = SQRT(1+slantslope^2)
1980  RETurn sdfl
1990  RETurn c_x
2000  RETurn c_y
2010  RETurn alf
2020 END DEFine :REMark FuNction slopeint(xs)
2030 :
2040 DEFine FuNction xdif(y)
2050  RETurn ((y - yint)/slp2) - (invf(y))
2060 END DEFine
2070 :
2080 DEFine FuNction ydif(x)
2090  RETurn ( yint + x * slp2 ) - f(x)
2100 END DEFine :REMark FuNction ydif(X)
2110 :
2120 DEFine FuNction f(x)
2130 REMark given x, find y
2140  RETurn lamb*((ABS(1-((ABS(x)/lama))
```

```
      ^lamn))^(1/lamm))
2150 END DEFine
2160 :
2170 DEFine FuNction invf(y)
2180 REMark given y, find x
2190  RETurn lama*((ABS(1-((ABS(y)/lamb))
      ^lamm))^(1/lamn))
2200 END DEFine
2210 :
2220 DEFine FuNction Lamdy(x)
2230 REMark x is related to lama
2240 REMark when slope = +- infinity ?
2250 REMark when x = lama & x/lama = 1
2260 REMark ie 1-1 = 0 ?
2270 REMark when x = 0
2280 REMark evaldy
2290 lbmr = lamb/lamm
2300 mmal = (1/lamm)-1
2310 xlar = x/lama
2320  IF NOT(x) AND lamn<1 THEN
2330   L_dy = lbmr * ((1-(xlar^lamn))^mmal) *
      -lamn
2340   L_dy = L_dy * (1E-7/lama)^(lamn-1)/lama
2350   RETurn L_dy
2360  END IF
2370  IF x == lama THEN
2380  L_dy =  lbmr * ((1-(((x-(1E-7))/lama)
      ^lamn))^mmal)
2390  L_dy =  L_dy * -lamn * (((x-(1E-7))
      /lama)^(lamn-1))/lama
2400 RETurn L_dy
2410  ELSE
2420   L_dy = lbmr * ((1-(xlar^lamn))^mmal) *
      -lamn
2430   L_dy = L_dy * ((x/lama)^(lamn-1))/lama
2440   RETurn L_dy
2450  END IF
2460 END DEFine
2470 :
2480 REMark name as find_corners? box points,?
2490 DEFine PROCedure any_knees
2500  oldxing = 0 :xing$ = '0' &' '&lamb&' '
2510  stpsz = (lama-0)/(16*n)
2520  init = 0
2530  FOR I = 0 TO lama  STEP stpsz
2540   slope = Lamdy(I)
2550   newxing = ABS(slope)-1
2560   IF SGN(newxing * oldxing)=-1 THEN
2570    call$ = 'knee'
2580    xing = zeroin(I-stpsz,I,eps)
2590    xing$ = xing$ & xing & ' '
2600    y_point = f(xing)
2610    xing$=xing$&y_point&' '
2620   END IF
2630   oldxing = newxing
2640   init = 1
2650  END FOR I
2660  xing$ = xing$&lama&' '&'0'&' '
2670 END DEFine any_knees
2680 :
2690 DEFine FuNction SGN(x)
2700  RETurn (x>0) - (x<0)
2710 END DEFine
2720 :
2730 REMark knee(s) of curve, slope = -1
2740 DEFine FuNction inflect
2750  call$ = 'knee'
2760  RETurn zeroin(0,lama,0)
2770 END DEFine
2780 :
2790 REMark convert results from str$ to array
2800 DEFine PROCedure parseknees
2810 LOCal I, j
2820 REMark count the number of entries
2830  entries = 0
2840  FOR I = 1 TO LEN(xing$)
2850   IF xing$(I)=' ':entries = entries+1
2860  END FOR I
2870  endpts = entries/2
2880  PRINT #0; \endpts;' end points'
2890  PRINT #0;'slope',,'  x',,'  y'
2900  DIM bxs(endpts+1,5)
2910 REMark bxs hold 4 sides 1-4 as top,right,
     bottom,left
2920 REMark  & 5 as area of box
2930  DIM pts(endpts,4)
2940 REMark pts(0,0) for total arclength
2950 REMark pts(...,0) for abs(slope)-1
2960 REMark pts(...,1) for x values
2970 REMark pts(...,2) for y values
2980 REMark pts(...,3) for area by grule
2990 REMark pts(...,4) for leng by grule
3000 REMark pts(0, 1&2) for from to values?
3010  par$=xing$&' ' :REMark pad w/extra space
3020  FOR I = 1 TO endpts
3030   FOR j = 1 TO 2
3040    strp = ' 'INSTR(par$)
3050    pts(I,j)=par$(TO strp-1)
3060    par$=par$(strp+1 TO)
3070   END FOR j
3080  END FOR I
3090 REMark is the slope nearly horiz or vert?
3100  FOR I = 1 TO endpts-1
3110   pts(I,0) = Lamdy((pts(I,1)+pts(I+1,1))
       /2)
3120  END FOR I
3130  FOR I = 1 TO endpts
3140   CIRCLE pts(I,1),pts(I,2),.2
3150   PRINT #0;\pts(I,0 TO 2),
3160  END FOR I
3170  PRINT #0;
3180  segm = 1
3190  REPeat segments
3200   PRINT #0;'pts(0,0) = ';pts(0,0)
3210   PRINT #0;' Segment ';segm,
3220 REMark between -1 and +1 more horizontal
3230 REMark ELSE more vertical
3240   vorh = SGN(ABS(pts(segm,0))-1)
3250   IF vorh >0 : PRINT #0; ' mostly
       vertical,  ';
3260   IF vorh < 0 : PRINT #0; 'mostly
       horizontal,  ';
3270   IF (vorh < 0 )THEN
3280    dx_len = 0  : go_dx
3290    grule_dx pts(segm,1),pts(segm+1,1)
3300    pts(segm,3)= dx_are
3310    pts(segm,4)= dx_len
3320    pts(0,0) = pts(0,0) + dx_len
3330   END IF
3340   IF (vorh > 0 ) THEN
3350    dy_len = 0 : go_dy
3360    grule_dy pts(segm+1,2),pts(segm,2)
3370    pts(segm,3) = dy_are
3380    pts(segm,4) = dy_len
3390    pts(0,0) = pts(0,0) + dy_len
3400   END IF
3410   segm = segm +1
3420   IF segm = endpts : EXIT segments
3430  END REPeat segments
3440  gb_leng = pts(0,0)
3450 REMark and how about boxes ?
3460  INK 6
```

```
3470  FOR I = 2 TO endpts - 1
3480   bxs(I,1)=pts(I,2) :REMark top side
3490   bxs(I,2)=pts(I,1) :REMark right
3500   bxs(I,3)=pts(I+1,2) :REMark bottom
3510   bxs(I,4)=pts(I-1,1) :REMark left
3520   bxs(I,5) = (bxs(I,1)-bxs(I,3))*
       (bxs(I,2)-bxs(I,4))
3530   PRINT #0; ' box @ ';I;' =  ';bxs(I,5)
3540  END FOR I
3550  IF endpts = 4 THEN
3560   bxs(endpts,5)= pts(3,2)*pts(2,1)
3570   PRINT #0;' box 2-3 = ';pts(3,2)*
       pts(2,1)
3580  END IF
3590  FOR I = 0 TO DIMN(pts)
3600   PRINT #0;\pts(I,0 TO 3)!!
3610  END FOR I
3620  gruledsum = 0
3630  FOR I = 1 TO endpts-1
3640   gruledsum = gruledsum + pts(I,3)
3650  END FOR I
3660 END DEFine parseknees
3670 :
3680 REMark region across
3690 DEFine PROCedure go_dx
3700  LOCal I
3710  INK 2
3720  PRINT #0; ' do a dx from x = ';pts
      (segm,1);
3730  PRINT #0;' to x = ';pts(segm+1,1)
3740  pts(0,1) = pts(segm+1,1)
3750  plusminus = SGN(pts(segm+1,1)-
      pts(segm,1))
3760  IF SGN(plusminus) == 1 THEN
3770   bxs(segm,1)=f(pts(segm,1))
3780   bxs(segm,3)=f(pts(segm+1,1))
3790   bxs(segm,4)=(pts(segm,1))
3800   bxs(segm,2)=(pts(segm+1,1))
3810  ELSE
3820   bxs(segm,1)=f(pts(segm+1,1))
3830   bxs(segm,3)=f(pts(segm,1))
3840   bxs(segm,4)=(pts(segm+1,1))
3850   bxs(segm,2)=(pts(segm,1))
3860  END IF
3870  POINT pts(segm,1),f(pts(segm,1))
3880  stepsize =  -plusminus*(pts(segm,1)
      -pts(segm+1,1))/n
3890  FOR I = pts(segm,1) TO pts(segm+1,1)
      STEP stepsize
3900   LINE TO I,f(I)
3910  END FOR I
3920  FOR I = pts(segm,1) TO pts(segm+1,1)
      STEP stepsize
3930   LINE I,0 TO I,f(I)
3940  END FOR I
3950  INK 7
3960 END DEFine go_dx
3970 :
3980 REMark region up
3990 DEFine PROCedure go_dy
4000  LOCal I
4010  INK 4
4020  PRINT #0; ' do a dy from y = ';pts
      (segm+1,2);
4030  PRINT #0;' to y = ';pts(segm,2)
4040  pts(0,2)= pts(segm,2)
4050  plusminus = pts(segm,2)-pts(segm+1,2)
4060  plusminus = SGN(plusminus)
4070  IF SGN(plusminus)==1 THEN
4080   bxs(segm,1)=f(pts(segm,1))
4090   bxs(segm,3)=f(pts(segm+1,1))
4100   bxs(segm,4)=(pts(segm,1))
4110   bxs(segm,2)=(pts(segm+1,1))
4120  ELSE
4130   bxs(segm,1)=f(pts(segm+1,1))
4140   bxs(segm,3)=f(pts(segm+1,1))
4150   bxs(segm,2)=(pts(segm+1,1))
4160   bxs(segm,2)=(pts(segm+1,1))
4170  END IF
4180  POINT pts(segm+1,1),pts(segm+1,2)
4190  stepsize = -plusminus*(pts(segm+1,2)-
      pts(segm,2))/n
4200  FOR I = pts(segm+1,2) TO pts(segm,2)
      STEP stepsize
4210   LINE TO invf(I),I
4220  END FOR I
4230  FOR I = pts(segm+1,2) TO pts(segm,2)
      STEP stepsize
4240   LINE invf(I),I TO 0,I
4250  END FOR I
4260  INK 7
4270 END DEFine go_dy
4280 :
4290 REMark show overlaps, gaps
4300 DEFine PROCedure fillboxes
4310  LOCal I
4320  DIM inks(4)
4330  inks(1) = 0 : inks(4) = 7
4340 REMark overlap = gold 242, gap = pink 235
4350  IF ((lamn›=1) AND (lamm›=1)):
      inks(2)=242 : REMark gold
4360  IF ((lamn‹=1) AND (lamm‹=1)):
      inks(2)=235 : REMark pink
4370  IF bxs(2,5) THEN
4380   IF ((lamn›1) AND (lamm‹1)): inks(2)=242
       : inks(3)=235
4390   IF ((lamn‹1) AND (lamm›1)): inks(2)=235
       : inks(3)=242
4400  END IF
4410  FOR I = 2 TO DIMN(bxs)-1
4420   INK inks(I)
4430   FILL 1
4440   POINT bxs(I,4),bxs(I,1)
4450   LINE TO bxs(I,2),bxs(I,1)
4460   LINE TO bxs(I,2),bxs(I,3)
4470   LINE TO bxs(I,4),bxs(I,3)
4480   LINE TO bxs(I,4),bxs(I,1)
4490   FILL 0
4500   IF bxs(I+1,5): PAUSE 20
4510  END FOR I
4520  INK inks(4)
4530 END DEFine fillboxes
4540 :
4550 REMark get slant area and length
4560 DEFine FuNction grule_slant
4570 REMark using slant method
4580  LOCal I
4590  s_area = 0 : REMark slant area
4600  s_leng = 0 : REMark slant length
4610  a = 0 : b = lama
4620  FOR I = 1 TO n/2
4630   tp = a_b(AB(I))
4640   slope = Lamdy(tp)
4650   s_tp = diag2Lame(tp)
4660   l_tp = alf
4670   tm = a_b(-AB(I))
4680   slope = Lamdy(tm)
4690   s_tm = diag2Lame(tm)
4700   l_tm = alf
4710   s_quadshigh = s_tp + s_tm
4720   l_quadshigh = l_tp + l_tm
4730   s_quadarea = s_quadshigh * W(I)
```

```
4740   l_quadarea = l_quadshigh * W(I)
4750   s_area = s_area + s_quadarea
4760   s_leng = s_leng + l_quadarea
4770  END FOR I
4780 REMark n odd and › 1 ?
4790  IF ((n/2)-INT(n/2)) AND (n›1) THEN
4800   s_areahigh = diag2Lame(a_b(0))
4810   l_areahigh = alf
4820   s_quadarea = s_areahigh * W(I+1)
4830   l_quadarea = l_areahigh * W(I+1)
4840   s_area = s_area + s_quadarea
4850   s_leng = s_leng + l_quadarea
4860  END IF
4870  IF n = 1 THEN
4880   s_quadarea = s_areahigh * 2
4890   s_area = s_area + s_quadarea
4900   l_quadarea = l_areahigh * 2
4910   s_leng = s_leng + l_quadarea
4920  END IF
4930  s_area = s_area * di_len/2
4940  s_leng = s_leng * di_len/2
4950  INK 7
4960  RETurn s_area
4970  RETurn s_leng
4980 END DEFine
4990 :
5000 DEFine PROCedure grule_dx (lox,hix)
5010  LOCal I
5020 REMark this is the ordinary across
5030 REMark except for limits
5040  dx_are = 0 : REMark based on dx
5050  dx_len = 0
5060  a = lox : b = hix
5070  FOR I = 1 TO n/2
5080 REMark temp plus side
5090   tp = a_b(AB(I))
5100 REMark temp minus side
5110   tm = a_b(-AB(I))
5120 REMark combine heights for use in dx area
5130   dx_aqh = f(tp) + f(tm)
5140 REMark collect slopes and process
     independently
5150   slope = Lamdy(tp)
5160   dx_lp = SQRT(1+(slope*slope))
5170   slope = Lamdy(tm)
5180   dx_lm = SQRT(1+(slope*slope))
5190 REMark now combine 'heights' for use dx
     length
5200   dx_lqh = dx_lp + dx_lm
5210 REMark use weights with heights
5220   dx_aqa = dx_aqh * W(I)
5230   dx_lqa = dx_lqh * W(I)
5240 REMark add them in
5250   dx_are = dx_are + dx_aqa
5260   dx_len = dx_len + dx_lqa
5270  END FOR I
5280 REMark if n odd and n › 1
5290  IF ((n/2)-INT(n/2)) AND (n›1) THEN
5300   dx_aqh = f(a_b(0))
5310   slope = Lamdy(a_b(0))
5320   dx_lqh = SQRT(1+(slope*slope))
5330   dx_aqa = dx_aqh * W(I+1)
5340   dx_lqa = dx_lqh * W(I+1)
5350   dx_are = dx_are + dx_aqa
5360   dx_len = dx_len + dx_lqa
5370  END IF
5380 REMark this is an extreme case !
5390  IF n = 1 THEN
5400   dx_lqa = dx_aqh * 2
5410   dx_len = dx_len + dx_lqa
5420   dx_aqa = dx_aqa * 2
5430   dx_are = dx_are + dx_aqa
5440  END IF
5450 REMark convert back from [-1 to 1] to
     actual dimensions
5460  dx_are = dx_are * (hix-lox)/2
5470  dx_len = dx_len * (hix-lox)/2
5480 END DEFine grule_dx
5490 :
5500 DEFine PROCedure grule_dy(loy,hiy)
5510  LOCal I
5520 REMark this is going up
5530 REMark with limits
5540  dy_are = 0 : REMark based on dy
5550  dy_len = 0
5560  a = loy : b = hiy
5570  FOR I = 1 TO n/2
5580   tp = a_b(AB(I))
5590   tm = a_b(-AB(I))
5600   dy_aqh = invf(tp) + invf(tm)
5610   slope = Lamdy(invf(tp))
5620   dy_lp = SQRT(1+((1/slope)*(1/slope)))
5630   slope = Lamdy(invf(tm))
5640   dy_lm = SQRT(1+((1/slope)*(1/slope)))
5650   dy_lqh = dy_lp + dy_lm
5660 REMark quadsarea
5670   dy_aqa = dy_aqh * W(I)
5680   dy_lqa = dy_lqh * W(I)
5690 REMark add them in
5700   dy_are = dy_are + dy_aqa
5710   dy_len = dy_len + dy_lqa
5720  END FOR I
5730 REMark if n odd, › 1
5740  IF ((n/2)-INT(n/2)) AND (n›1) THEN
5750   dy_aqh = invf(a_b(0))
5760   slope =  Lamdy(invf(a_b(0)))
5770   dy_lqh = SQRT(1+((1/slope)*(1/slope)))
5780   dy_aqa = dy_aqh * W(I+1)
5790   dy_lqa = dy_lqh * W(I+1)
5800   dy_are = dy_are + dy_aqa
5810   dy_len = dy_len + dy_lqa
5820  END IF
5830  IF n = 1 THEN
5840   dy_lqa = dy_aqh * 2 : dy_len = dy_len +
       dy_lqa
5850   dy_aqa = dy_aqa * 2 : dy_are = dy_are +
       dy_aqa
5860  END IF
5870  dy_are = dy_are * (hiy-loy)/2
5880  dy_len = dy_len * (hiy-loy)/2
5890 END DEFine grule_dy
5900 :
5910 REMark Ghs Gaussian hypergeometric series
5920 REMark has tol been declared earlier?
5930 DEFine FuNction GHS(a_h,b_h,c_h,z_h)
5940  IF (can_useGamma) THEN
5950   sum = use_Gamma
5960  ELSE
5970   sum =  1 :addt = 1 : count = 0
5980   REPeat series
5990    addt = addt * (a_h+count) *
        (b_h+count) * z_h
6000    addt = addt / (c_h+count) * (count+1)
6010    sum = sum + addt
6020    IF ABS(addt) ‹ tol:EXIT series
6030    count = count + 1
6040   END REPeat series
6050  END IF
6060  g_hs = sum
6070  RETurn sum
6080 END DEFine
6090 :
6100 DEFine FuNction can_use_Gamma
6110 LOCal test
```

```
6120 REMark Gamma is undefined for negative
     integers
6130  test = 0
6140  test = test + isnegint(c_h-a_h-b_h)
6150  test = test + isnegint(c_h-a_h)
6160  test = test + isnegint(c_h-b_h)
6170  RETurn NOT(test)
6180 END DEFine
6190 :
6200 DEFine FuNction use_Gamma
6210  tg1 = Gamma(c_h)
6220  tg2 = Gamma(c_h - a_h - b_h)
6230  tg3 = Gamma(c_h - a_h)
6240  tg4 = Gamma(c_h - b_h)
6250  RETurn (tg1*tg2)/(tg3*tg4)
6260 END DEFine
6270 :
6280 DEFine PROCedure get_GHS
6290  g_hs =  GHS(a_h,b_h,c_h,z_h)
6300  PRINT#2,,'GHS area = ';
6310  ghs_area = AxB*z_h*g_hs
6320  PRINT#2; ghs_area
6330 END DEFine  get_GHS
6340 :
6350 :
6360 REMark how well do numbers agree ?
6370 DEFine FuNction agree(num1,num2)
6380  LOCal I
6390  num_avg$ = ((num1+num2)/2)
6400  zpn2 = 0
6410  IF num1 = num2 : zpn2 = 7
6420  IF num1‹num2 THEN
6430   nine$ = num1/num2
6440   zero$ = num2/num1
6450  ELSE
6460   nine$ = num2/num1
6470   zero$ = num1/num2
6480  END IF
6490  IF zero$='1' OR nine$ = '1': zpn2 = 7
6500 REMark count the contiguous 9's ".99xx"
     etc.
6510  nines = 0
6520  FOR I = 2 TO LEN(nine$)
6530   IF nine$(I) = '9' :nines = nines + 1
6540   IF nine$(I) ‹› '9' THEN
6550    IF nine$(I) INSTR('5678'):nines =
        nines + 1
6560    EXIT I
6570   END IF
6580  END FOR I
6590 REMark count the contiguous 0's in
     "1.00xx"
6600  zeros = 0
6610  FOR I = 3 TO LEN(zero$)
6620   IF zero$(I) = '0' : zeros = zeros +1
6630   IF zero$(I) ‹› '0' THEN
6640    IF zero$(I) INSTR('1234'):zeros =
        zeros + 1
6650    EXIT I
6660   END IF
6670  END FOR I
6680  IF NOT(zpn2) : zpn2 = (zeros + nines)/2
6690  dpin = (1 AND ('.'INSTR(num_avg$)))
6700  agreenum = num_avg$(1 TO (zpn2 + dpin))
6710  RETurn zpn2
6720  RETurn agreenum
6730 END DEFine
6740 :
6750 :
6760 REMark is it a negative integer ?
6770 REMark undefined in the Gamma function
6780 DEFine FuNction isnegint(n)
6790  IF ( (n‹= 0) AND (n - INT(n) = 0)) THEN
6800    RETurn 1
6810  ELSE
6820    RETurn 0
6830  END IF
6840 END DEFine
6850 :
6860 REMark restate for function of interest
     for zeroin
6870 REMark call$ for various functions
6880 DEFine FuNction Fof(zi)
6890  IF call$ = 'x_fit' : RETurn  ydif(zi)
6900  IF call$ = 'y_fit' : RETurn xdif(zi)
6910  IF call$ = 'knee' : RETurn Lamdy(zi) + 1
6920 END DEFine
6930 :
6940 DEFine FuNction zeroin(ax,bx,tol)
6950  LOCal a,b,c,P,q,r,fa,fb,fc
6960  a = ax:  b = bx:  fa = Fof(a)
6970  fb = Fof(b):  c = a:   fc = fa
6980  REPeat loop1
6990   prev_step = b-a
7000   IF ( ABS(fc) ‹ ABS(fb) ) THEN
7010    a = b:  b = c:  c = a
7020    fa = fb:  fb =fc:  fc = fa
7030   END IF
7040   tol_act = 2*eps*ABS(b) + tol/2:
7050   new_step = (c-b)/2
7060   IF (ABS(new_step) ‹= tol_act) : EXIT
       loop1
7070   IF  ((fb+1)= 1): EXIT loop1
7080   Tz1 = 0
7090   IF (ABS(prev_step)›=tol_act) THEN
7100    IF (ABS(fa)›ABS(fb )) THEN
7110     cb  = c - b
7120    END IF
7130   END IF
7140   IF ( a =c )  THEN
7150    Tz1 = fb/fa
7160    P = cb*Tz1
7170    q = 1 - Tz1
7180   ELSE
7190    q = fa/fc:  Tz1 = fb/fc :  Tz2 = fb/fa
7200    P = Tz2 * ( cb*q*(q-Tz1) - (b-a)*
        (Tz1-1) )
7210    q = (q-1) * (Tz1-1) * (Tz2-1)
7220   END IF
7230   IF ( P › 0 ) : q = - q
7240   P = ABS(P)
7250   IF (P‹(.75*cb*q-ABS(tol_act*q)/2))
       THEN
7260    IF (P‹ABS(prev_step*q/2)) THEN
7270     new_step = P/q
7280    END IF
7290   END IF
7300   IF ( ABS(new_step) ‹ tol_act )  THEN
7310    IF ( new_step ›  0 )    THEN
7320     new_step = tol_act
7330    ELSE
7340     new_step = -tol_act
7350    END IF
7360   END IF
7370   a= b:  fa= fb
7380   b = b + new_step:  fb = Fof(b)
7390   IF
((fb›0)AND(fc›0))OR((fb‹0)AND(fc‹0))THEN
7400    c = a : fc = fa
7410   END IF
7420  END REPeat loop1
7430  RETurn b
7440 END DEFine :REMark zeroin
7450 :
```

QCoCo - A Review

by Dilwyn Jones

Once upon a time a nice gentleman in France decided (or was persuaded) to make our computers more colourful. And we saw that it was good, because we had longed for more than 8 colours.

Then reality dawned that it wasn't that easy to write programs to use these new colours. Yes, we could write little basic programs which could use some weird and wonderful colours (none more weird than some of the colours I came up with!). But as most of us are using pointer environment it still wasn't really practical or feasible to write quality standardised appearance programs to make good use of the colours.

Then along came another nice man in Germany (once described by the nice man in France as "having a brain the size of a planet.") and invented Window Manager 2. In theory, this made use of the colours rather neater, as you could now play with palettes, colourways and fancy borders in a more colourful way than before.

Nice as that was, you had to struggle with QPTR (some people chew the QPTR package for breakfast, most of us mere mortals spit it out when we realise we're not clever enough to use it)) to make real use of it. See Wolfgang Lenerz's articles on Programming QPTR in SBASIC for more on this.

George Gwilt also wrote about his plans for support for colourful programs via Turbo and Turbo-PTR. As I have never really tried to learn Turbo-PTR, that will stay on the plate for now as far as I'm concerned, rather than digested and possibly spat out if I don't take the time and effort to fully learn and appreciate it.

Most pointer programs have probably been written using the combination of Easyptr and QLiberator, which is the combination I'd been using. Easyptr had never been updated to use the new colours, although you could resort to techniques such as those described in Wolfgang Uhlig's article back in Volume 8 issue 5.

Two things happened which suddenly made it easier for us to write colourful programs using Easyptr and QLiberator.

1. Marcel Kilgus programmed an "unofficial" update (now an official update) of Easymenu, the pointer driven menu designer part of Easyptr. This was released for testing and used by a few of the well known software authors and there are some examples of software (mostly freeware) which were made using this version.

2. Wolfgang Uhlig released QCoCo, the QL Colour Configurator. This lets you alter the Window Manager's system palette.

A third contribution came from Jérôme Grimbert in the form of a new sprite editor to allow us to design the new format high colour sprites to make best use of icons in programs. The new Easymenu can make some use of high colour sprites. But sprites are not really relevant to this review.

The changes to Easymenu makes it easier to enter the new colour values into menu elements like loose items, information windows, borders and so on. Significantly, it also lets you specify the window manager palette element numbers. These have already been discussed in QL Today by Wolfgang Lenerz back in Volume 7 Issue 6 and Volume 8 Issue 1 (New Functionalities in SMSQ/E). To specify the ordinary colours in the new Easymenu, you simply enter them as a decimal number 0 - 255 as before, but when used in high colour mode, you get real colours, not just stipples. The exciting bit is that you can enter the new window manager colour schemes and the easiest way is to use the system palette and enter the number of the menu element concerned. That way, your menu will use the system palette, as will all the programs which also make use of it. In this way, your programs can use and adapt to the "standard" colour scheme without having to write fancy colour configuration options.

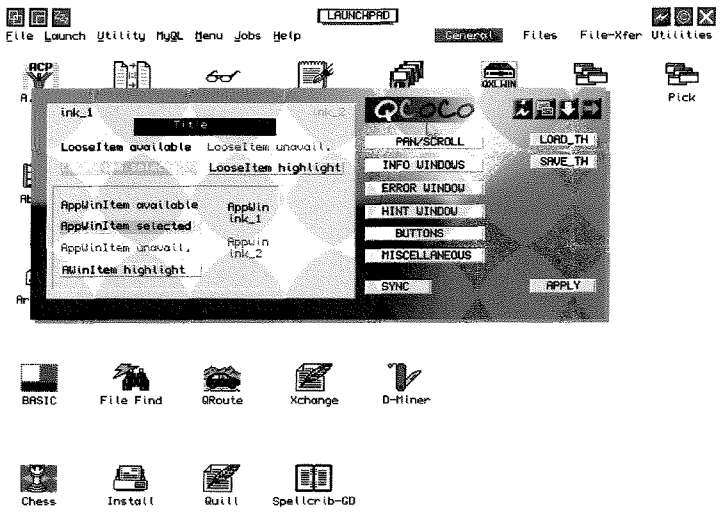


Figure 1: Main display of QCoCoq

Using the table on page 50 of the second part of Wolfgang Lenerz's article in Volume 8 Issue 1, you simple take the menu element number, a 16 bit hexadecimal value and specify that as the colour to use. In fact, in the new Easymenu the colour of elements seems to default to these numbers, such as $0200 for the window border, $0207 for the colour of the highlight border around loose items when you move the pointer over them and so on. It all sounds a bit technical and off putting, but since the author of the Easymenu update has made it sensibly default to system palette values you can with a little care use this system without really understanding it if necessary.

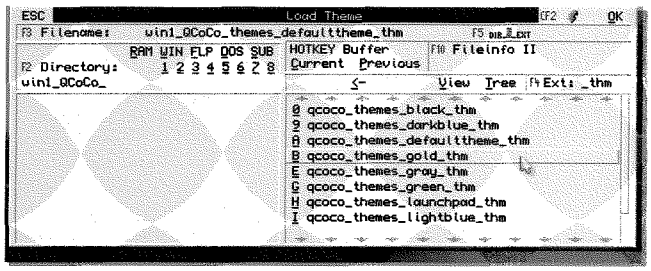


Figure 2: Loading a Theme

Which is all well and good - new programs can now use the system palette and all look broadly the same, a similar notion to how all sorts of programs look vaguely alike on other operating system.

Then you realise - how can you alter this colour scheme if the default system palette is not to your liking? It's all well and good for authors to write programs which can make good use of the new colours, it's nice for users to have control of the colours too.

Enter Wolfgang Uhlig, who has written an excellent little program called QCoCo, which is an abbreviation for QL Colour Configurator. It makes light work of redefining the colours of the system palette. Don't like green, red, white and black? Want some nice greys or menus which are just a little different to the usual QL colours?

QCoCo lets you click on the various elements of a menu and specify a colour. You can then save the list of colours as a named theme and later load in your preferred colour scheme and apply it to the system palette. Fancy orange on wednesdays? Black on fridays? Blue mondays? Loading the relevant theme makes it that easy with QCoCo.

A theme is little more than a list of colour entries for the system palette. You load the colours list and apply it to the system palette, from then on it uses that colour scheme. Only programs which have been written or updated to use the colour scheme actually use it. The number is fairly small at the moment, but growing all the time and likely to grow rapidly once the Easyptr update is available from our QL software traders and familiarity with Easyptr and System Palettes increases via articles like this, hopefully. Some updated versions of old favourites like QPAC1 and QPAC2 can use the new colour schemes, some programs from the Jochen Merz stable use it (e.g. QD and the Menu Extension) and several authors of freeware programs (such as Per Witte and myself) are also releasing programs, so the list is growing.

I wrote this article just after releasing my first such program, so my name will also be joining the list of people releasing high-colour programs for this environment now that the tools to do so are available. Do not expect older programs to suddenly start displaying dozens of colours, they will continue to use their existing colours. Quill will still be white or green ink on black paper (unless you do some advanced tinkering of colour palettes on suitably equipped systems!)

Fittingly for a program designed to help make the most of the colours available, QCoCo itself is brightly coloured. It uses a system called 'skins' to allow a graphics file to be used as a background for the program's main window, using an extension called BMPLOAD by Wolfgang Lenerz. Some sample backgrounds are included, with instructions on how to add your own. Essentially, they are Windows BMP files of a specified size. I use a supplied 'Fountain Fill' one which is rather like a rainbow, or vaguely like that colour sticker we attached to the cover of QL Today a few volumes ago when colour drivers were new. At first you feel you need sunglasses to watch a program with that many colours displayed, but I prefer to think of it as a 'happy' colour scheme. I wouldn't like all my programs to look like that, but for an application like QCoCo it's ideal, after all what else is QCoCo for but to handle and change colours? The QCoCo logo is also very colourful.

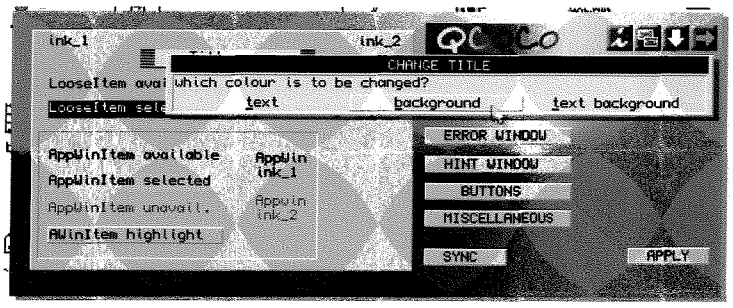


Figure 3: Which element's colour is to be changed?

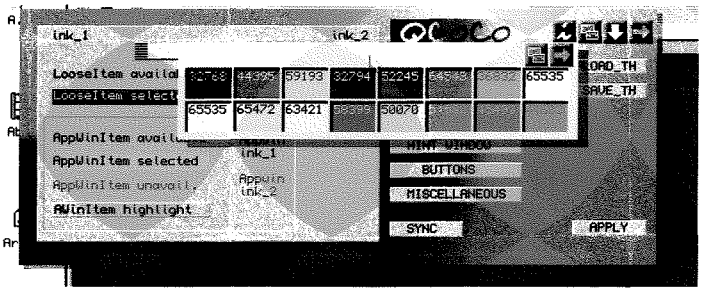


Figure 4: The 16 preferred colours list

OK, so we've decided it looks good. Does it work well too? Fortunately, yes it does.
First thing to do is to configure it. You can specify what 'skin' is loaded to determine its appearance. Use one of your own if you wish. Or none if you prefer. You can also specify what theme to load as it starts, or you can let it simply use the default window manager colour scheme.
I'm reviewing version 1.53 of the program. If you are using the 256 colour mode on an Aurora or QPC2, don't try to use skins, there is a problem which causes a 'BMP8LOAD bad parameter' error report which has been reported to the author. When it asks 'Retry/Continue/Abort' press 'C' for continue and it will carry on without loading the skin. Thankfully, the problem is limited to appearance - the program still works well enough for the intended task.

USING IT

On the left of the program display you get a list of the main menu elements. These are the outline of the menu, loose items and application windows. Here you can assign paper colours, ink colours and borders for all these, together with different colours for selectable items depending on their states. As a loose item or application window menu item can be Available, Selected or Unavailable, so these elements have a set of three possible colours so that they change colour when you click on them, for example. To change the colours of the main outline, just click in the area of the outline away from the loose items and the application window. It's quite easy to tell what's what since each part has the name of the element in it (as long as you don't implement a silly colour scheme where ink and paper are the same colour!
In general, windows can have one paper colour, one border colour and two ink colours - the foreground and middleground ink colours (QCoCo refers to them as ink_1 and ink_2). Most programs only use Ink_1 but the facility is there for those that do use it.
To change the colours of the title strip at the top, click in the title area, select whether you want to change ink, paper or strip colour (QCoCo refers to paper and strip as background and text background in this case, the text background of course being the colour of the background just behind the actual text). Once you've selected from the menu which item to change the colour of, you are presented with a little colour selection menu. It contains sixteen boxes of colours to choose from, and you can define these to be your favourite set of sixteen colours or any sixteen to be used in your menu (sixteen colours is usually more than enough for a single menu!). Left clicking (a Hit in QL terminology) with the mouse on a colour box selects that colour for the menu element, or if you wish to change the colour right click on it (a Do in QL terminology) and a rather complex looking colour picking menu comes up.
In this window, the large window (usually starting off as blue) is the colour which will be returned when you click on the 'OKAY' item on the right. Under the blue box there is a rainbow of colour. Click in this somewhere to select the colour hue and the blue window will change to the colour selected. Click on the 'brightness' button and you get a slider knob which varies from black right up to full brightness for that colour when you either click on a point on the line or drag the slider knob. Click on the 'Saturation' item and you can alter the saturation of the colour - settings toward the '-' end of the scale make the colour paler and greyer. Take the slider down to the bottom of the scale and it becomes somewhere between white and black depending on the setting of the Brightness slider. This is how you generate shades of grey - you'll notice that there's all the colours of the rainbow in the colour 'hue' selection, but no white, grey and black which are selected as I've just described. Click

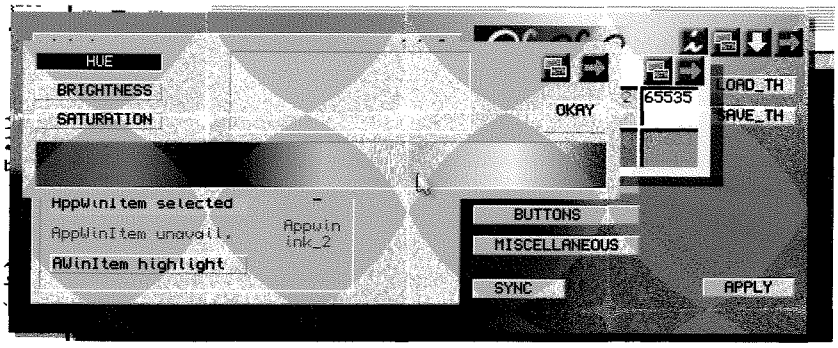


Figure 5: Altering one of the 16 colours, using the Hue/Brightness/Saturation colour selection

on 'OKAY' and the colour is sent to the relevant box on the colour selection palette.
These colour boxes have the decimal colour numbers written in them, so you know what colour values you are using in case you need to know, e.g. for comparison with colours used elsewhere. In this version there seems to be no way of actually specifying the exact colour number if you need to exactly match a shade of colour used elsewhere. This shouldn't be a limitation - colour palette selection is more of a visual thing, you go by how good it looks, not by numbers.
Once back in the main menu, there's a list of six sets of settings which can be altered. These relate to pan and scroll bars, information windows, error message windows, hint windows (the little bubble help suggestions windows which appear when the pointer hovers over an element for a few seconds in programs like recent versions of the QD editor), buttons (as in Button Frame) and finally a miscellaneous set which includes general border colours plus menu index and separator lines, as used in programs like the QSpread spreadsheet program.
The border colours setting can be very important if using the new '3d' borders. 3D borders are made up of a light colour and a dark colour defined in the system palette content number $0230 and $0231. If you wish to use 3D borders this pair of colours should be set here before specifying the border colours. In general, specifying a border colour for a menu element asks if you wish to use a simple one colour border or one of the 3D border colours, which are designed to make an element look raised, lowered or somehow 'sculpted'.
Some of these 3D borders are compatible with standard QL borders - the size and shape of the border mean it can reasonably be drawn in the area used by a standard border. Some of the borders aren't - they reduce the area of an element or simply cannot be reasonably reproduced in a traditional QL border area. The border type selection menu does indicate if a border is likely to be QL compatible or not. If the program is to be used on a non high colour system, do not use the non-compatible ones. You should also exercise care when using 3D borders on small elements like loose items. They may reduce the area available inside a loose item or small window which means you get an error when a text or sprite will no longer fit the available space inside the loose item or window. 3D borders are most effective as menu outlines or borders on larger windows like application windows or large information windows. Some care is also needed in the choice of colours - 3D borders look best if you think of it as light and shade. Decide where the line is coming from, apply lighter colour from that direction, darker colour where you'd expect the shade to be.

Figure 6: Altering pan/scroll bars and scroll arrows

Thankfully, it's pretty self explanatory and doesn't take long to get used to.

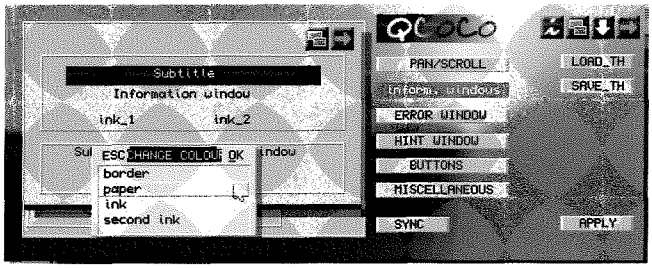


Figure 7: Changing information window colours

Some of the changes to the colours made within QCoCo can be seen immediately. To see some, such as the 3D borders, you have to click on the APPLY button bottom right of the program display. This updates the system palette, but does not save the theme. To save the theme (a file with a list of palette colour values having the filename extension _thm for easy identification), click on the SAVE_TH button on the right of the program display. This brings up a familiar Jochen Merz Menu Extension File Select menu for selection of filename to save the file. The suggested filename includes the configured drive and directory name plus the filename extension - press F3 or click in that box to edit this filename. At this point I kept making a mistake when I saved changes I'd made to an existing theme because I assumed it would save using the previous filename but it didn't. Instead of saving to the intended file, I kept saving to win1_QCoCo_themes_ _thm by mistake and when I next tried to use the theme of course I thought changes had been lost. In fact, it was my own mistake (and probably laziness) but I couldn't help feeling that it might have been a little better if a theme had already been saved or loaded that the same filename should again be offered as a suggestion here to both make life a little easier for lazy people like me

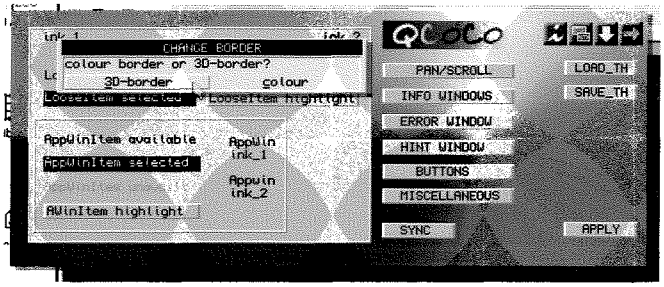


Figure 8: Altering a border-choosing a simple coloured border or a new 3D border

and perhaps a little bit safer for my data for accident prone people like me!

Once you have created and saved a colour scheme (a 'system palette') there are two ways in which it can be used. The first is using QCoCo - load the theme and click on APPLY. After that, the programs which are designed to use the system palette (well, palette 0 - there can be up to 4 of them, as per Wolfgang Lenerz's articles) will be displayed in that colour scheme.

A second way is by using a few lines of SBASIC along the lines of the supplied program setconf_bas. Basically, when executed as an sbasic job with a command line specifying the theme's filename this allocates space in the common heap for a palette table (list of colours) and reads in the colour values from the specified theme file, pokes them into the heap space to create the new system palette table, uses the new SBASIC command SP_SET (again, see Wolfgang Lenerz's article for details) to update the system palette and finally use RECHP to release the space reserved once the palette has been updated. The new system palette is now active.

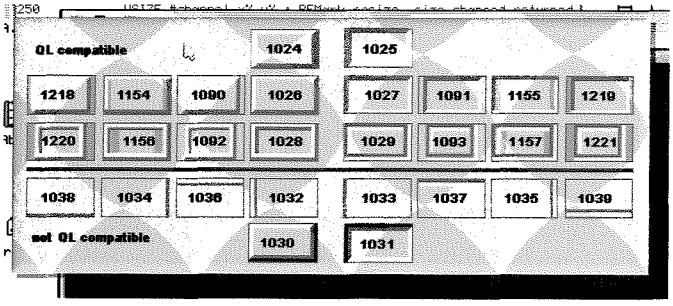


Figure 9: Selecting a 3D border. Note how it even lets you know which ones are QL compatible!

If you wish to get rid of your newly defined palette so that SMSQ/E resets to the default values when it started, use the SP_RESET extension as described by Wolfgang Lenerz.

QCoCo has an unusual facility called SYNC, whose function is not really described in the short instruction document, although when you select the command some information is shown to describe its purpose. On the basis of loose item paper and ink, several colours are adapted in order to create a uniform look. To some extent, it automates colour selection. Results vary - sometimes it creates a good colour scheme from the right choice of base colours. It's always worth a try since quite often colour schemes revolve around a small number of ink and paper colours.

A couple of example themes are supplied - they use shades of grey to create a pleasant colour scheme not too unlike the greys used by some Windows applications, for example, but with a distinctly QL feel. The second is a 'gold' theme. This is very classy and attractive and certainly makes your programs stand out. I've designed a few others which I've sent to the author in the hope that he'll make them available via his website - you can download this program (and other good programs) free of charge from Wolfgang Uhlig's website at http://www.uhlich.nl/ql/ if you have internet access, or get it from a PD library if not. The program is freeware.

One point to note is that colour changes don't always take effect immediately. If a program is already running in memory existing menu colours don't change until menus are redrawn. The instructions give examples such as having to click on QPAC2 buttons to see the colour changes. Sometimes colour changes appear when you redraw a menu or enter a new menu. You soon get used to it.

SUMMARY

In some respects, QCoCo can be summarised as a pleasant front end for an otherwise not too easy to use window manager system. QCoCo makes a world of difference to the use and handling of the system palette through its 'what you see is what you get' system - it is well thought out, attractively presented and really easy to use. You need to be familiar with pointer environment terminology to understand what's going on, you need to know the difference between a loose item and an information window for example (if not get a copy of Norman Dunbar's PE Idiot's Guide from a PD library for a gentle beginners guide to pointer environment).

The best part of all this is: you don't need to be able to program to make use of the colours. You create a colour theme that other people's software will use, although you'll need versions of programs able to use the system palettes. If a program is designed to use system palette 0, just

use QCoCo to recolour the system palette to your likes!
Just don't make the colours too loud please!
It took me a while to muster up the courage and time to master this subject. I'm quite glad I did, because QCoCo makes an otherwise fiddly job simple. Well worth the effort - if you want to make use of the system palette Marcel Kilgus has built into recent versions of SMSQ/E on systems able to use high colour modes, get this program, you won't regret it. And SBASIC programmers could use this program to create colour themes or system palette colour lists to simplify the task of supplying choices of colours with their programs by studying setconf_bas and reading Wolfgang Lenerz's articles in QL Today.
The Window Manager is not the easiest of subjects to tackle. QCoCo makes system palettes about as simple as they can possibly be.
The program requires menu extensions and a sufficiently recent version of SMSQ/E to be able to use it.

Letter-Box 1

by Simon N. Goodwin

Cheap new Qdos-compatible laser printers

Roy Wood, and anyone else who still mistakenly believes you need an obsolete Epson printer to get hard copy from Qdos, should be pleased to hear that Morgan Computers are selling brand new Tally T9114 14 page-per minute 600 DPI laser printers, with 500 sheet A4 capacity, (**www.morgancomputers.co.uk**) for just £70.49 including VAT. These have parallel as well as USB ports, and use the HP-PCL control codes supported by Text87, ProWesS, Psion's suite and various QL screen-dump and other formatting tools. DIY Toolkit volume K is a good start, but I would say that (I wrote it and made it freely available with source and Quill docs).

As our editor Dilwyn noted a year or so ago on the QL-users mailing list, "There are some HPDJ [PCL] graphics printing programs around, Image Processor and Graphics Viewer (by me) and Page Designer 3 (by Barry Ansell) spring to mind, no doubt there's more."

Indeed, there's Dilwyn's DeskJet-A5, now sold by Darren of QCelt, which uses PCL to pack two pages of QL output text onto each A4 sheet. And Ghostscript renders documents and graphics in Adobe's Postscript printer control language (from which PDF is derived) to PCL printers, among others (also to PDF files).

Even QL programs that only work with Epson protocols can now drive PCL printers via Ghostscript and Tarquin Mills' port of the Linux EPSONPS tool which translates Epson control codes to Postscript (for Ghostscript to translate to PCL) though the direct route to PCL (e.g. via a Deskjet driver) is obviously preferable. :-)

Dilwyn has made a list of QL-friendly printers online:

http://homepages.tesco.net/dilwyn.jones/printers/printers.html

This covers some of the most common older models but there are hundreds more.

A general tip is in order; any printer with the serial or parallel port and support for HP-PCL 3 or later versions will work with all the QL HP PCL drivers, avoiding the Epson ESC-P incompatibilities Roy Wood aluded to in his column at the end of last year.

The Tally printer, like the Brother HL series printers I use from my QL and emulators, has USB as well as parallel port input, selected automatically.

While there's no USB hardware and hence no USB drivers for Qdos (and making a USB host interface is as different from making a USB peripheral as a screwdriver is different from a screw - USB is not symmetrical) you can drive USB from emulators like the free Qdos-compatible UQLX for Unix, Linux, BeOS and now (thanks to Peter Graf and the freeware Cygwin project) on Microsoft Windows too - and such printers will auto-switch between real and emulated QL output, if you have both systems connected at the same time.

Editor's comment: At the time we lay the magazine out, the printers are still there, in stock, and at the same price.

Just a note of caution about the cheaper laser printers. Many of these, including my Samsung, are advertised as having HP PCL 6 emulation, but this appears to be via software in the printer driver rather than firmware in the printer itself. They are thus not QL compatible. For obvious reasons QL Today can only recommend printers that have been physically tested with a QL.

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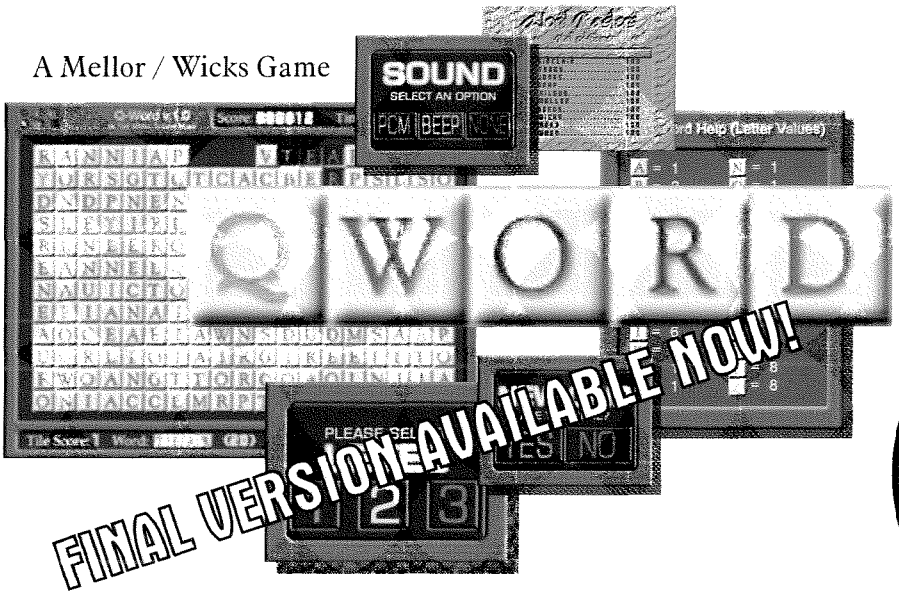

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Letter-Box 2

by George Gwilt

Letter to QL Today re Norman Dunbar's Article on Assembler - Part 13

It is always a pleasure to read Norman Dunbar's articles on Programming in Assembler. I was especially interested in Part 13 which deals with recursion since I had to resort to that device in at least two places in GWASS and I wanted to see how someone else tackled the problem.

The program to find Fibonacci numbers certainly works but does far more than is needed as Norman says, so it is a good idea to change the program to avoid the duplication. I have a comment or two on the suggested code for storing calculated values.

First I should perhaps apologise for the fact that GWASL does not zero blocks of space set by its DS command so that these blocks have to be cleared by program. In fact later versions of GWASS (but not GWASL) do zero the space.

Second, I think that there should have been a hash (#) in front of 1000 in the instruction just before I_Loop. Run on my Q60 without the hash this would result in a disastrously large count of 27727.

Third, I am not sure why the pair of instructions

```
clr.l    (a3)
adda.l   #4,a3
```

were not replaced by the single

```
clr.l    (a3)+
```

Fourth, it seemed to me to be more sensible to fill the space allotted for answers with the answers themselves rather than simply clear them. I know that this would eliminate the need for recursion altogether, but I couldn't resist writing and using the following anyway:

```
          bra       start
answer    ds.l      46                  ; Not 1000 (see below)
start     lea       answer,a3
          tst.l     (a3)                ; Table filled? . .
          bne       end                 ; . . yes
          moveq     #1,d1
          move.l    d1,(a3)+            ; Set Fib(0)
          move.l    d1,(a3)+            ; Set Fib(1)
          move.w    #43,d0              ; count for the remainder - 1
loop      add.l     -8(a3),d1           ; Add Fib(n-2) to Fib(n-1)
          move.l    d1,(a3)+            ; Store Fib(n)
          dbf       d0,loop
end       moveq     #0,d0
          rts
```

This can be CALLed to set the Fibonacci numbers 0 to 45. Fibonacci numbers from 47 onwards are greater than 2^32 and so do not fit in a long word. Fib(46) is greater than 2^31 and so would be treated by PEEK_L as a negative number. Hence I saw no need for more than 46 answers.

Recursion in GWASS

I found the need for recursion in GWASS during the determination of Label values.

A label, L1, say, may be set to a number by L1 EQU 6, or it might be set to a combination of labels by, say, L1 EQU 6 + L2 - L3. If the values of any of the labels in the list are as yet undefined, a list (called an EQU list) is set up in place of the value. When the entire program has been scanned all the labels must by then have been assigned values. At this stage a routine GLAB gets the value of the EQU list. It is here that recursion appears, since any of the labels in an EQU list might itself be an EQU list which must then in turn be evaluated by a another call to GLAB.

Each label has a 4-byte value and a 2-byte type as follows:

Type	Value
0 undefined	-
1 defined	value
2 EQU list	pointer to EQU list
3 ERROR	

Here is an extract from the subroutine GLAB

```
; GLAB
; At entry:
;  A1 -› EQU list LABEL
;
; At exit:
;  LAB Value and Type are set
;
;  If error: Type is set to 3 & D0 = -1
;  otherwise D0›=0
;
; All other registers are preserved
;
; Format of EQU list is:
;  Long       Word   Word   Word
; ____________________________________________________
;| constant | op(0) | L(0) | . . | op(r) | L(r) | 0 |
;
; The op(i) are + or -
; L(i) are labels
;
; The value of an EQU list is "constant op(0) L(0) op(1) L(1). . op(r) L(r)"

GLAB      MOVEM.L   D1-2/D5-7/A3-4,-(A7)
          CMPA.L    G_LIMIT(A6),A7
          BLT       QER35      ----›    not enough space on stack
          MOVEA.L   VAL(A1),A3          pointer to EQU list

          . . .

GL_LP     MOVE.W    (A3)+,D3            op(i) or 0 for end of list
          BEQ       GL_END

          . . .                         (A4 -› LABEL L(i)

          BTST      #3,D0               is L(i) EQU list? ...
          BNE       GL_EQU              ... yes

          . . .

          BRA       GL_LP

          . . .

GL_EQU    . . .

          MOVE.L    A1,-(A7)            Keep current EQU list LABEL
          MOVEA.L   A4,A1               Set L(i) as EQU LABEL
          BSR       GLAB                Set the value of L(i)
          MOVEA.L   (A7)+,A1            Restore current EQU list LABEL
          . . .

          BRA       GL_LP

GL_END    . . .                         (Set LABEL value and type)

          MOVEM.L   (A7)+,D1-2/D5-7/A3-4
          TST.W     D0                  set condition codes
          RTS
```

As Norman has indicated it is possible to use too much stack and overwrite parts of ram that someone else is using. That is why I test that there is enough stack space each time I enter GLAB. The value stored in G_LIMIT(A6) in fact allows for 256 spare bytes. If there is too much recursion and so not enough space, GWASS signals an error and closes down. Apart from the addition of the check on stack size the format of GLAB seems to follow that of Norman's examples very closely.
A second case connected with recursion is in GWASS macros. One such is:

```
ext1    macro
        if      \3<=\4
        dc.w    \1\3-\2
        ext1    \1,\2,|\3+1~,\4
        endif
        endm
```

(The call to ext1 within ext1 itself contains the parameter |\3+1~. This means "replace \3+1 by its value".)

As an example of the use of ext1:

```
ext1    SH,HERE,1,4
        \1 is SH, \2 is HERE,
        \3 is 1 \4 is 4
```

will result in

```
        dc.w    SH1-HERE
        dc.w    SH2-HERE
        dc.w    SH3-HERE
        dc.w    SH4-HERE
```

so it is quite a useful macro. The code in GWASS allowing macros to call themselves, or other macros, does, as Norman suggests, include LINK and UNLK to allocate from the stack the space needed for each invocation.

Finally, Norman asks whether anyone has a good 32 bit MULU and/or MULS routine. As it happens there is a routine in GWASS which multiplies two 12-byte numbers together. There are two versions, one is suitable for 68020 up to 68040 and the other works on a 68060. The 68060 does not have the MULU.L 32x32 -› 64 instruction so I had to use the lowly MULU.W instead. The code is at GN_TEN2 in the source code for GWASS. Unfortunately Jenkins' (or whatever his name was) law applies. This law states that any of your own code written more than six months ago might as well have been written by someone else. This means that I can't easily tell you how it works.
Perhaps Norman will deal in future articles with the efficient organisation of space within an assembler program. This would allow him to give examples of just how LINK and UNLK should be used.

Letter-Box 3

by Bob Spelten

Dear Dilwyn,
In your piece on writing programs with EasyPTR for WMAN2, you mention using DISP_TYPE to find out what mode your QL is currently in. The values 2 & 3 you found conform to the values given in the original GD2 document (v2.98, 2000) for setting the colour depth with DISP_COLOUR, but my experience in using the DISP_TYPE command for Suqcess2 is different. When SMSQ/E 3 is started in mode 4 this function will return 0 but on Aurora this will be 5! In 8 bit mode you get 16 and in 16 bit mode the answer is 32, probably 33 on Qx0. I have tested this on Aurora, QPC2 and QXL. These values are still true for version 3.09. (An updated document on all the new colour commands would be welcome.)
Suqcess2 is written to run from SMSQ/E 3.xx only, but it does run in QL colour, 8 bit or 16 bit colours. I use `DISP_TYPE` to test for the current colour mode and Suqcess2 will adapt automatically. Any result below 16 is considered to be mode 4 and only mode 4 sprites are used, else the mode 32 sprites are used, also looking good in 256 colours. On Aurora I mostly choose high resolution over colour. All menu colours are defined as System Palette $2xx colours and this works like the old 'Colourways' in mode 4. We used an Alpha version of EasyMenu 4 for this but still had to do some colour poking. Now with EasyMenu 4.xx out, no more poking needed and scaleable Suqcess2 is under construction.
In your chapter on scaling you used `result%(8)` and `result%(9)` as returned from `PVAL` to calculate the new screen size. This will work in most cases but not if the pointer is in an Application Window and a keypress is used instead of a mouse click on the Move item. Then the above 'result' will be the size of this Application Window, not the Main Outline! In that case you can `PEEK_W` the Working Definition (`MWDEF(#ch)+32` for Xsize, `MWDEF(#ch) +34` for Ysize).

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22 Feb 03

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To Internet or not to Internet (in Spain)

by Tony Firshman

A long while ago Jochen Merz, Roy Wood and Marcel Kilgus decided to try to have a Spanish holiday. I joined in and we tried to organise a QL show as well. Eventually we found about 2/3 of a user who could come - one person was almost sure they could make it to Madrid.

I went to bed early the night before the trip but woke up at 00:30 feeling something was wrong. I had a look at my email, and, sure enough, Roy had found he was unable to join us. Can one get ESP from emails?

I never quite got back to sleep properly, and even managed to fax the Madrid hotel to try to change the booking.

I arrived in Madrid at about 11:30 to get an SMS from Jochen "Could I wait at the airport and share a taxi?". He was planning to leave the airport (with Marcel) at around 17:00 and I don't think he realised I arrived so early. I found a Metro cost an incredible 1 Euro to the centre, so I SMSed that info back. Our "Best Western Hotel Madrid" was near Sol. Last time I visited Madrid I had my wallet stolen there! I was chatting to a local on the train, and she said "You are going to Sol. Beware of the pickpockets" - Oh dear.

I walked from Sol to the hotel feeling nervous. I should not have worried.

The first thing I did at the hotel was ask whether the wifi worked. "We do not have wifi". Oh dear. However they did have internet - it plugged into an RJ11 socket using a Telefonica device. From the LEDs I guess it was a USB ethernet switch. I discovered later that they connected to the network with a spaghetti patch box in the office. However one had to manually configure IP etc. It took a while to figure "E.S." was the Spanish for "Gateway" but it worked perfectly and at 1mbps. When Jochen and Marcel arrived things were more complicated, as none of us had brought a network switch. We eventually used Jochen as a server and Marcel and I connected via bluetooth.

Later Jochen and Marcel tried to get a "Combinado" ticket for the "Warner Park Madrid". This was at Atocha station - the place that had the terrorist bomb in March 2004. I have been there before so knew that the old station was now a tropical rainforest. It is incredibly hot and humid - there are mist sprays. The frogs I saw a few years back were replaced by turtles!

.... however getting information on the train to the Warner park was difficult. "Information" did not speak English or German. There were massive glossy posters everywhere, but no mention of a station name. The posters said "use the ticket machines" but nothing on the fancy touch screens. Eventually we found the 'real' station name and that Combinados were only available from the ticket office. "Can I have two for tomorrow please" said Jochen. "No" - you had to buy them on the day.

Before we arrived in Spain we had the idea of organising a QL show but only got a handful of replies. One person, Javier Guerra, said he might be able to come. .... so we had 75% of a person! We made contact with him by email, SMS and Skypeout, and arranged to meet him in the evening at the hotel. We then became -real- tourists and had a drink in Playa Major. We chatted in our common language (English of course) and found he had a collection of original QLs, which he had not used for many years. I hope he will be encouraged by the current QL activity to use them again.

The boys went off to roller coasters the following day and I had Friday on my own.

I made contact with an English teacher I knew from a choir trip, and she took me to a very good Tapas bar that we had rejected the

Atocha Station

The QL meeting in Madrid

previous day. It is good to have a local contact!

We continued to have a brilliant trouble free internet connection in Madrid in the cheap but very functional hotel. They even refunded Roy's hotel room without hassle. The only problem was I left my trousers behind!

We then took the Altaria train to Barcelona from the above mentioned tropical rain forest. We arrived at the very expensive Barcelona hotel feeling in good spirits. "Do you have wifi" "Yes", and they gave us web logon details.

In the room, there were plenty of possible wifi sources. Only one though was there consistently, but required a network key. Marcel found a loose RJ45 cable, plugged in and used nmap to find details of an open http port. He set these values manually and got a connection. Yippee. However for all three of us to connect we needed to use Jochen's computer. We then tried Jochen's and nothing. We then connected back to Marcel and nothing. We went to the lobby "How do we use wifi?" "This is only available downstairs". However we could not even get a connection to the wifi let alone get http connection. Three hours later, and after the 'help' from an "engineer", still no internet. The engineer was a screwdriver and light bulb variety who spoke only Spanish. He did not even know how to spell ipconfig! We were advising him. We asked for compensation, but all the management offered was a free meal. The internet saga continued.

In the evening we walked along the beach to the Olympic area. We eventually settled in a Pizza Hut. This gave the boys their ration of American fare. In fact it was an out of the ordinary chain, and served quite a bit of local produce. I had patatas - well fried potato but not the usual international fries.

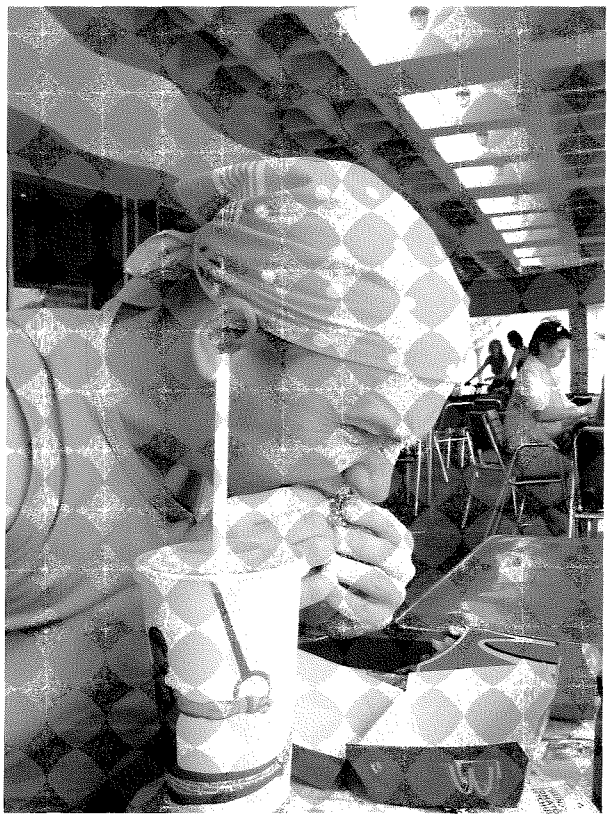
On Sunday, there was again no internet. They finally admitted that the whole hotel had internet problems and it was a problem with the provider.

Despite Jochen not getting up at 4am to reserve a place on the beach, we found an empty slot and sunned ourselves. I hate beach lazing, but I reluctantly admit I found the sea very good. One hears nasty stories about the med, but the water appeared very clean. The dark brown round ovoid object that hit me at one stage was in fact a piece of wood. We only saw one jellyfish. The only black mark was the late night policeman scanning the beach with a metal detector for "bombastos".

I returned to the hotel 30 minutes before the others, and got my internet work done. However the connection had gone by the time the others arrived. We walked into Barcelona centre via Marcel's Big Mac fix. We did a very tourist round - harbour, La Rambla, the gothic centre and then to Gaudi's La Sagrida Familia, a cathedral under construction. This is either a monstrous edifice from Middle Earth or a magnificent work of modern art. It was designed by Gaudi and started in the 19th century. It is like Marmite - you either love it or hate it. I think I have both emotions. I last saw it almost 30 years ago, and they have done more work in 30 years than in the previous 120! They say it will be finished in 2027. We then had a meal at a great restaurant that we all liked. Jochen was ecstatic about the Crema Catalana. It was the best Crème Brulèe I have ever had. We then walked back to the hotel, almost getting waylaid by some huge and pretty ugly prostitutes. We reckon we walked 15km that day.

Monday morning was more hopeful on the internet front. Finally someone at the provider knew what they were talking about, and we got a connection using a fixed IP etc, bypassing the logins. At last we could catch up, and Jochen only had about 500 emails.

We went into Barcelona on Monday to go up the funicular to Tibidabo. Easy - just take the L7 to Tibidabo. We change at Diagonal and follow the very many signs for the L7. However at the end point the signs disappear. Even a local did not know the answer. It turned out the Tibidabo line was a different company and we had to leave the station and enter another one. My 10 ticket carnet allowing limited time travel did not get stamped again, but Jochen and Marcel had to buy another ticket. We arrived at Av Tibidabo, only to be told the Funicular did not run on



Pirate Marcel getting his fix

Mondays and Tuesdays. He told us about another station and let us back onto the station without paying again! We got to the top of another hill without incident, found a caf less spot with view and viewless spot with caf . We then found we could walk to Tibidabo without trouble and past a very interesting telecom tower. Tibidabo was full of children's entertainment, but they were shut, and (of course) there were practically no tourists. Perfecto. The view on the way and there was tremendous. .... and Marcel's very bad sunburn from the previous day was manageable.

We then proceeded to look for somewhere to eat in Barcelona. I have very different ideas of where and what to eat than the others, so we parted company that evening, More correctly I stomped off in a huff!

On Tuesday I went into Barcelona with a shopping list of guitar related publications. The first hurdle was to find what had happened to La Museu de la Musica. I knew it had closed and was being rebuilt. .... but where had it moved to? Hotel OMM had grown where it used to be. Palau de Musica Catalana said it was at the corner of Gran Via and C. Roger de Lluria. Even the concierge at the Ritz (on that junction) had not heard of it. I eventually found someone closing a music shop and they directed me to Casa Beethoven in La Rambla. It was shut, but a very nice lady in the neighbouring museum told me when it would open - "in 2 hours". Casa Beethoven was the most amazing shop with plenty of old music and records. Their email address is

ludwigvb@casabeethoven.com

- very elegant. They had none of the music books Sarah wanted, but they directed me to Casa Parramon just around the corner. This was the publisher of one of the books, which I bought for EUR 150. They also told me that Museu de la Musica was in packing cases in La Franca - an industrial estate outside Barcelona. It turned out to be alongside the train on the way to the airport. "It will open again in two years". They did though have one of the catalogues for the museu that Sarah wanted, and gave it to me for nothing! They had a really magnificent collection of old instruments - much better than I have seen anywhere. They then directed me to two other specialist classical guitar shops. The first again had a collection of instruments, but only up to 100 years old! They also had another book, and many catalogues. After many hours of detective work, I was at last reaping rewards. I then proceeded to the last address - Casa Sors. This was music shop, teaching studio and repair workshop. They had none of the remaining books. This was a pity as they were the appointed outlet for the closed Museu's stock of catalogues, but had sold out. However the owner showed me an amazing publication that had just been published - an encyclopaedia of Spanish music in four large volumes, much like Groves. He showed me his entry. It was all in Spanish of course. I rang Sarah and explained what it was. "amazing - how much?" "170 euros" "How much is that?" ..... "OK get it". Thank goodness for credit cards.

I then proceed to our meeting place outside La Sagrida Familia.

We then had our last meal in a cafe we visited on Sunday, and Jochen had TWO of the magnificent Crema Catalana (Crème caramel).

Before returning to the hotel, we had a walk on the beach. There were plumes of what looked like smoke, or disinfectant. It turned out that the beach was being washed and swept clean by tractors - very nice. I hope they never hit "bombastos".

We all left the following morning, and I was the first to go by train. As usual, directions were very intermittent, and I eventually had to make 4 changes and used 3 tickets! Ludicrous. It took so long that I arrived after Jochen and Marcel, but I was 8 Euros better off!

Easyjet was totally trouble free as usual for about £45 return. Don't believe what you see on TV.

It's not Rude to Point

by David Denham

"It's official. We can all freely use pointer environment now."
"Err, how exactly?"
Two lines quoted from a conversation with a QL owning friend.
He is typical of the die hard users. He got a QL nearly 20 years ago, enjoys using superbasic, but little else other than Quill to type a few letters, Abacus to hold a few tables and lists and very occasionally Archive using some routines I wrote for him a few years ago and which he occasionally asks me to update.
He has never felt the need to venture beyond this setup. I keep offering to show him how to use Xchange and a few other little useful programs, but his reply is always that at his age he cannot be taught new tricks (nice excuse that one!). The QL and Trump Card have served him well over the years and he really feels he needs little else since it does all he wants of a computer.
A friend at the gardening club has a PC and we tried to show him all the wonderful things my QL system and this PC could do, but after one session on the PC he said he "never wanted to see that thing again." So I tried to persist with encouraging him to be a little bit more adventurous with his QL. As he is retired ("twice over" according to him) and a widower, I felt it important to encourage him to use his brain and to see using the QL as keeping his brain active in his elder years. To be fair, he politely allowed me to show him how to use various programs, although he's conveniently forgotten more than he's taken on. He is able to write some Superbasic programs so it's not as if he isn't capable of using a computer.
Where I came seriously unstuck was in trying to encourage him to use the pointer environment. I thought it would encourage him to think differently. At the moment he fires up his QL, runs Quill then resets the computer and runs another program. He sees the computer as a "one program at a time" thing, which may have been true of a ZX80 or ZX81 in those days, but it's sad because a QL can do much more. Back in 1984 this might have been an acceptable way of using a QL, and probably was quite normal in those days. These days it's just plain unnecessary.
My attempts to teach him pointer environment were not particularly successful. He can use it on my machine as long as I'm there to answer the odd question, but his faltering steps are probably born out of politeness and not wishing to offend me rather than a genuine wish to learn something new. So to all intents and purposes I've given up on him and decided to respect his wishes to be left alone to use his QL in the simple way he wishes to do so. I have decided I do not want to be a Pointer Environment Policeman.

It's FREE

So I came to the conclusion that there are two or three types of user who don't use pointer environment. There's people who prefer their QL just the way it is and for whom "it's rude to point." The second category of users is those who might well use it, but do not have the time to teach themselves how to use it, or who don't have the information to learn to use it, or who may have a lack of confidence in their own abilities to master something new. A possible third group might be those who are happy with their existing setup and who do not wish to spend on software which they feel might be worth almost as much as their 20 year old computer system.
For this third group, I've got news for you. Pointer environment is now free! For just the cost of dialling up to download the bits and pieces of software you need, you can get yourself set up to go. If you haven't got internet access to download them, all the files should be available from your local freeware software dealer for the cost of postage and copying a few disks.

What do I need?

The absolute minimum is a copy of three extensions files called ptr_gen, wman and hot_rext. These install extensions to your QL operating system called pointer interface, window manager and hotkey system. More on what these are in a moment.
I would suggest you get a copy of a tutorial called The Pointer Environment Idiot's Guide. It's available free from some websites and PD libraries. It's written for a complete beginner - like a dictionary, it explains all the terms as it goes along (geddit?). It's written by another QL Today author, Norman Dunbar.
If you already use SMSQ/E you will not need ptr_gen, wman and hot_rext. Equivalents of these are built into SMSQ/E. If you use a QXL

card in a PC, and you have the original SMSQ (the version without the 'E' in the name) it might not have the pointer environment built in if it was an original SMSQ purchased with the QXL. SMSQ/E is not free, you have to buy that and it's not cheap either. So if you are using QDOS at the moment, you might prefer to go down the free route first and if you decide you like it, you might decide later to get SMSQ/E if a version is available for your system, e.g. QLAY and some other emulators cannot use SMSQ/E as far as I know.

I would also suggest getting hold of a copy of Toolkit 2 if your system does not already include this. You can now get a free copy of this for use on QDOS systems. Some floppy disk systems have this built in in one form or another. Most of the Miracle Systems disk cards like Trump Card and Gold Card have it built in. Even older disk cards have older versions of Toolkit 2, sometimes a useful subset of the full Toolkit even if not the entire toolkit.

If you have a QL with an unused EPROM slot at the back, try to get a copy of the plug in Toolkit 2. It is no longer manufactured, but you do sometimes find that some of the traders might have a second hand cartridge to sell, and they might turn up on bring and buy stalls at computer shows from time to time.

You can get two versions of Toolkit 2 on disk. One is a very old reconfigurable version where you can pick and choose which parts of the toolkit to include, which may be useful on systems with very small memory. The second version is a copy of the ROM version saved to disk as what is called an "image". This is loaded a bit like the basic extensions you see in the boot files for some programs you buy or download for the QL. Beware: a pure ROM image might not be as simple to install as a simple basic extension, the commands needed may be slightly different - check with whoever you got it from.

So the list of programs we need now includes:

1. pointer environment
2. pointer environment idiot's guide
3. toolkit 2

That will be enough to start with. Later on, once you are up and running, I'd suggest buying a copy of Qpac2 a little free program called Qpacer to help set it up. Qpac2 can be a little daunting at first because there's quite a lot to learn in one go, so for the purposes of this article, we'll concentrate on the three items above.

Pointer Environment

This quite radically alters the whole way in which the QL works, but don't worry too much about that. Don't let that put you off. Once you get used to it, you'll wonder how you managed without it.

I think the best way to get yourself set up is to do so in a way in which you can continue to use your QL in the way you've been used to. So you can learn at your own pace without getting stuck and unable to use a system which has changed a fair bit while you learn. So what I suggest you do is to put your pointer environment onto a single disk while you learn and start up from that. That way, your computer can still operate without pointer environment for the time being.

Some suggestions for where to obtain the software you need are in the box elsewhere in this article. Once you've got the bits and pieces you need copy the three files ptr_gen, wman and hot_rext onto one disc. If you need a copy of Toolkit 2 on disk (the eprom or built in version is much better if you can, since it's always there and doesn't need to be loaded from disc).

The copy of Toolkit 2 I got hold of to write this article was called TK2_REXT. I know that there are several different versions out there with different filenames and different installation requirements. This one could be simply installed from disc with the three commands RESPR, LBYTES and CALL.

I would put the pointer environment idiot's guide on a separate disk. It doesn't need pointer environment just to read it, so you can just fire it up when you have time to read it.

For loading the pointer environment you will need to write a small basic program like this and save it on your pointer environment disk with the name BOOT to make sure it starts up automatically if the disk is in the QL's disk drive when it starts up. This process is called 'booting'. Nothing to do with giving the computer a good kick when it won't work!

The numbers in brackets after the word RESPR are the length of the files in bytes. Different versions of these files might have slightly different lengths, they may be slightly shorter or longer depending on what changes the programmer who wrote them made to the particular version you have.

Here's a summary of the latest versions of pointer environment I was able to get hold of, by the time you read this there may well be newer version.

Figure 1. Pointer environment file sizes and versions

ptr_gen version 2.01 is 18,480 bytes long
wman version 2.01 is 19,218 bytes long
hot_rext version 2.29 is 11,792 bytes long

You may realise from seeing the file lengths that pointer environment is not really a viable proposition on an unexpanded QL. Just those three files alone take up about 50 kilobytes of memory. It might just work on a QL with one of the old 128K memory cards, but the general message is the more memory available the better.

```
200 base=RESPR(18480 + 19218 + 11792)
210 LBYTES FLP1_ptr_gen,base
220 LBYTES FLP1_wman,base+18480
230 LBYTES FLP1_hot_rext,base+18480+19218
240 CALL base
250 CALL base+18480
260 CALL base+18480+19218
```

ptr_gen has to be loaded first. This installs something called an extended console driver which is responsible for saving and restoring the content of windows on the screen as you switch from program to program, and provides facilities for an on-screen pointer (pointer interface) which is driven around the screen either with a mouse (if you have one for the QL) or with the cursor arrow keys. The term 'pointer environment' strictly speaking refers to the facilities installed just by ptr_gen. Some programs will work with just this bare basic pointer environment installed. The extra bits like fancy windows and hotkeys are added by wman and hot_rext, and the combination of the facilities provided by all three bits of the software is referred to as the 'Extended Environment' although it is common for people to use the term Pointer Environment in a looser sense to mean the whole lot, whereas by rights this should be called the Extended Environment.

The program first reserves enough memory to hold all three of them with the RESPR statement in line 200. This could be done with three separate RESPR statements if you wish, one each for all of the three files. I remember someone telling me ages ago it was more convenient to use a single RESPR statement where possible rather than several separate ones, although I don't know the reason why.

The LBYTES commands load the files in the required order.

The CALL statements are needed to run a small piece of machine code which sets up the facilities of the new environment ready for you to use.

If your system already has toolkit 2, you should check your system to see if it needs a TK2_EXT command to make it 'wake up' ready for use. Some systems supplied an onboard Toolkit 2 which remained hidden unless you deliberately activated it so that the QL could be used with or without toolkit 2. In those early days of the QL, when Toolkit 2 was still new there was software around which either failed to work properly if Toolkit 2 was present, or the designers simply wanted to give people the option to use it or not. So we can add this line but only if really needed:

```
190 TK2_EXT
```

If your system does not have an on board toolkit 2, you will need to load it from disc. The exact method will vary depending on what type you have obtained. If it is a ROM image you may need the following lines added:

```
100 REMark install TK2 rom image
110 base=RESPR(16384)
120 LBYTES FLP1_tk2_rom,base
130 CALL base+PEEK_W(base+6)
```

(the rather odd looking PEEK_W command in line 130 is because ROM images have an unusual header at the beginning which identify it as a ROM image, and after that are some pointers to various places within the rom which tell us how to start it properly, this is all explained in more detail in the QL technical documentation publications - thanks to Marcel Kilgus and Dilwyn Jones for this information).

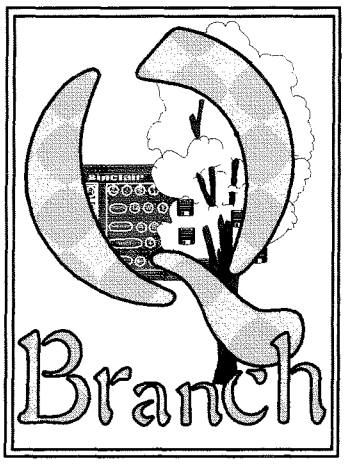
If it is a toolkit 2 designed to be loaded with the usual RESPR LBYTES and CALL statements, you should add the following lines:

```
110 base = RESPR(16384)
120 LBYTES FLP1_tk2_rext,base
130 CALL base
```

The number in brackets after RESPR in line 110 should be altered to suit the particular version you obtained. Shorter versions are usually extracts of Toolkit 2 created with the Reconfigurable disk version. A full and complete Toolkit 2 on disk or rom image is usually 16384 bytes long.

Just to add a little bit of complication here. Emulator users may need to use a different approach to loading the Toolkit 2 ROM image. QLAY and Qemulator users (the only ones I know anything about) have the facility to install ROM images directly from their emulator control menus. You need to explore the documentation for how to do this if the version of Toolkit 2 you have is a ROM image. It can be hard for a non-technical person to tell them apart if a file on disk, you may need to ask whoever supplied the disk.

Q Branch



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More New Stuff

After the flurry of new releases and updates at the start of the year things have settled down and users have had a chance to look at the new things on offer.

QDT is proving to be a big hit and the good news is that Jim Hunkins is working on the next major release now that he has almost completed his relocation to Canada. Users of the new Easyptr have also been impressed with the facilities on offer and we can expect to see the fruits of that soon.

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So far, our boot program has installed Toolkit 2 and the Extended Environment. What we have done so far provides a perfectly usable if minimal system.
So let us try using it. Put the pointer environment disk into the QL disk drive and reset the QL. It should now bootup and when it's finished you will see, umm, absolutely nothing. The QL probably looks like nothing has changed at all. This is the nice thing about pointer environment. So much has changed, yet it looks like nothing has changed. We'll see the difference when we start to use it.

Let's find a nice simple program to execute. Suppose it's call myprog_task. We'll execute that and see what happens.

```
EXEC FLP1_myprog_task
```

Hmmm, still looks like nothing's changed. If the program failed to start and it didn't need any extra extensions installed, it is probably too old to work with pointer environment, in which case just try another program instead. Assuming it started OK, let's see what happens when we switch between this program and superbasic. This is called task switching - switching from one program to another, as opposed to multi tasking, which is where two or more programs seem to be running at the same time.
With task switching, although both programs (and in some respects superbasic is just another program running) are co-existing in the QL memory, only one is actually active and running at a time. One is active, the others are suspended - you can only type stuff into one program at a time or chaos might ensue!
Task switching from one program to another is done with the CTRL C keypress. You need to hold down the CTRL key on the keyboard and tap the C key and then let go of both. The QL jumps from one program to another and with the pointer environment installed, it remembers what each program was showing on the screen at the time.
So what you see happening is that the display of one program disappears and the display of another appears as if by magic. It's one of the more visible and most useful functions of pointer environment, and many people have it installed on their computer for this reason alone, although as with everything else there's many more reasons for using it than just that!
I don't want to overburden you with too much too soon, so at this point I'll leave you to play with it and see how you get on. Make sure you read the pointer environment idiot's guide which explains all the terminology in a clear and simple no-nonsense way.
I would then suggest you get hold of a copy of the Hotkey System guide. Hotkeys are keys you can define on your keyboard to carry out a particular task such as loading a program automatically, usually irrespective of what program you are using at the time. Hotkeys are not the easiest of subjects this early in your use of pointer environment, so I'll simply refer you to the information box for where to get the documentation and leave you to proceed at your own pace.
I hope you'll see that it really isn't rude to point on a QL!

Where to get everything

ptr_gen, wman and hot_rext should be available from most sources of free QL software. I got mine from Dilwyn Jones from his website at:
http://www.dilwyn.uk6.net/tk/index.html
I'm sure most traders would supply a copy on disk at minimal cost for those without internet access.
The pointer environment idiot's guide is available from most PD libraries and for those with internet access may be downloaded from:
http://dilwynjones.topcities.com/qldocs/qldocs.html
There is also a version you can read online if you prefer rather than go through the process of transferring it to your QL. It's on the same page.
The same page also has some useful articles and manuals about the hotkey system when you feel confident enough to tackle those!
SMSQ/E and QPAC2 may be purchased from Jochen Merz or Q-Branch. Both advertise in QL Today. If you want the Qacer program to help you set up QPAC2, I got a copy from Dilwyn Jones's PD library and I'm sure you can get it from many websites, but I didn't find it on his web pages at the time of writing this.
Toolkit 2 is available from
http://www.dilwyn.uk6.net/tk/index.html
The same site has a set of tutorial text files you can download too. These seem to be rather old versions of Toolkit 2 but should be adequate for most purposes.

Editor: I am glad about this article - thanks a lot. The last section with the links should also please many QL Today readers - at least one I know of, who is looking for TK2 for his brother!

Turbo V4.21

by George Gwilt

The latest version of Turbo allows the use of machine code functions and procedures which alter their parameters and which require arrays as parameters.

Yes, I know that from the earliest days this was supposedly impossible. The original manual said:

> ***"TURBO passes parameter information to resident procedures by value - not by reference."***
>
> ***"TURBO gets lots of extra speed, compared with the interpreter, because it keeps values and the details of variables in its own special form, rather than in the jumbled 'heap' (a technical term) of eight-byte entries which the interpreter uses. It can't let resident procedures or functions change values inside a task, as they don't know the correct format - they expect the interpreter's format."***

However, I noticed the following remark in a document dated 4th November 2000:

> ***"Chas [Dillon] hopes to implement . . . an IMPLICITV directive for Roms that change the parameters of Sinclair extensions . . ."***

I realised that if one of the authors of Turbo thought it feasible to allow altered parameters then it was worth investigating. Having seen a way of doing this I also realised that allowing array parameters was also possible. So I altered Turbo accordingly.

Effect on the User

Differences

Users might notice some differences between the new version of Turbo and previous versions and between the new version of Turbo and S*BASIC.

1. Programs will be slightly larger by 1/2% or so.
2. Speeds may be slightly different - some slower some faster.
3. S*BASIC allows two ways of dealing with returned string parameters. Strings are either dimensioned or not. If a string presented to a rom routine as a parameter to be returned is undimensioned the new value can take any allowable size. If the string has been previously dimensioned the returned string is limited in size to the dimension set, extra characters being simply ignored. Turbo only allows dimensioned strings.
4. S*BASIC allows sliced arrays to be used as parameters: Turbo does not.

Speed

One consequence of the change is that all parameters which are bare variables, by which I mean that they are not expressions, are now passed by reference even when the extension does not change any of its parameters. All other parameters such as pure numbers, string literals or expressions like x% + 3, are passed by value as formerly.

Having two possible routes instead of just one obviously increases the size of program and probably alters the speed of the compiled task. Changes have been made to Parser_task, which has to decide whether parameters to rom routines are passed by reference or value and has to deliver the appropriate output to Codegen_task for compilation. The speed of Parser_task may be slightly slower as a result though I have not noticed this either on a Q60 or on a JM rom with trump card. At any rate it is the speed of the compiled task which is the more important.

The changes having most effect on the speed of the compiled task are those in the coding to call a rom routine. When there are no parameters the speed is unchanged. If there is just one parameter and it is passed by value there are two extra instructions which will result in a fractionally slower speed.

For all other cases there are two extra instructions testing whether the parameter is by reference or value. Again, if the parameter is passed by value, this will result in only a tiny decrease in speed. If the parameter is passed by reference an alternative set of instructions is used. For a floating point or integer parameter passed by value, the value is extracted, then copied to an area whose address is then set in the Name Table. If the parameter is passed by reference the address from the Vector Table is extracted and this is entered into the Name Table. This latter is quicker than the former.

Simple string parameters are treated by Turbo as arrays in which case a S*BASIC type descriptor, ten bytes long, is set up and its address is put in the Name Table. The other method, passing by value, required the whole string to be copied.

This means that the time taken by the new method will be shortened for all strings longer than 16 bytes or so.

Slight caveat

Turbo sets up an area in ram mimicking S*BASIC sufficiently to allow machine procedures and functions to work. By arranging to pass all parameters by value the need for a Name List is eliminated. The new version of Turbo passes parameters by reference if they are variables. In S*BASIC such parameters will have an entry in the Name List pointing to the corresponding entry in the Name Table. As far as I can see, use of this is confined to cases where a string literal without quotes is passed as a parameter. An obvious example is:

```
OPEN_IN#3,ram1_something
```

In this case the code for OPEN_IN detects that the parameter is not a string and uses the entry in the Name List as the string required.

It is well known that Turbo always requires such strings to be in quotes, so this possible need for a pointer to the name list should not arise. At any rate, the pointer to the Name List is set by Turbo to -1, indicating "no entry".

Nevertheless, it is conceivable that some extension somewhere thinks that a parameter passed by reference must have a corresponding entry in the Name List and fails if there is not. That is why this caveat has been made.

Technical Changes to Turbo

Returned Parameters

Turbo calls rom routines by setting an area to which A6 points and which appears to the rom routine to be S*BASIC. In particular information about the parameters is set between (A3,A6) and (A5,A6) mimicking part of the Name Table. The bottom nibble of the second byte of the eight-byte entry for a parameter contains the type of parameter. The values 1, 2 and 3 indicate, respectively, string, floating point and integer. Parser_task, which sets the information for these entries, adds 8 to the type value for all parameters which are passed by reference. Parser_task also, naturally, sets up information for each parameter. If the parameter is passed by value, the information is that value; if the parameter is passed by reference the information is the position of the variable in Turbo's Vector Table.

One dimensional string parameters are stored in S*BASIC in one of two ways. If the string variable is not dimensioned it is held as a simple string in the variables area at an address whose value is in the Name Table for the variable. If the string is dimensioned, it is treated as an array complete with descriptor. The entry in the Name Table in this case points to the descriptor and not directly to the string itself. If the string variable is given a new value the result depends on whether it is treated as an array or not. If not, unless the string size remains the same, the space containing the old string is returned to the variables heap and a new space allocated for the new string. If the string has been dimensioned, the new string will always be placed in the fixed size area allotted. Turbo always treats strings as dimensioned so, in a compiled program, all simple strings are passed as arrays to the machine code routine.

Library of Templates

A program compiled by Turbo works by scanning a list of pointers to "templates". Each template performs a particular task such as "fetch integer variable". A new template "vec_par" has been introduced. This sets the position of a variable in the Vector Table.

One template is present in all programs compiled by Turbo. This is the entry routine. Amongst other things it contains the code to call a rom procedure or function. This routine has been changed to allow reference parameters.

The routine detects the presence or absence of the extra "8" in the parameter type. If it is not there, which has been the normal case for all previous versions of Turbo, the address containing the value of the parameter is set in the Name Table entry. Otherwise the address of the variable, taken from the Vector Table, is set instead. This has the effect of passing the parameter by reference so that the rom routine can change its value using BP_LET.

Arrays

As for returned parameters array parameters are passed by "reference". This is indicated by the addition of 8 in the same way as for non array parameters. In addition 4 is added to indicate an array.

The method of sending arrays to machine code routines relies on the fact that the actual items in an array are laid out in the same way in both BASIC and Turbo although the descriptors, to which a pointer in the Name Table refers, differ. A BASIC type descriptor is set up from the information in the Turbo descriptor and a pointer to the new descriptor is set in the appropriate Name Table entry. There follows a note of the layout of the two descriptors with an indication of their relationship.

Turbo descriptor:

Long word	Long word	Wd	Wd	Wd		Wd
p	s	n-z	d(n)	d(n-1)	..	d(0)

```
p      = pointer to values (absolute)
s      = space needed for items
n      = number of dimensions - 1
z      = 1 for strings : 0 otherwise
d(i)   = size of dimension i (eg DIM v%(3) would have d(0) = 4)
```

BASIC descriptor - in terms of the Turbo items

Long word	Wd	Wd	Wd		Wd	Wd
p'	n'	d'(0)	m(0)	. .	d'(n'-1)	m(n'-1)

```
p'     = p (pointer to values relative to BV_VVBAS)
n'     = n+1
d'(i)  = d(i)-1  [d'(n) = d(n)-2 for strings]
m(i-1) = d(i)*m(i)
m(n)   = 1
```

Footnote 1

The extracts from Turbo's original manual indicate that the format of variables differs between S*BASIC and Turbo. In fact all integers, floating point numbers and strings are held in exactly the same way. Integers are two bytes long, floating point values are 6 bytes long consisting of a two byte exponent and a four byte mantissa and strings are made up of a two byte length followed by that number of bytes. Even the items in arrays are held in exactly the same form.

What differs is the format of the descriptors for arrays and the fact that no undimensioned strings appear in Turbo.

Footnote 2

One of the reasons for the recent change in Turbo was to enable it to compile programs such as those written using QPTR. Perhaps on a later occasion I might relate how I managed to compile QPTR's "demo_bas" using the new version of Turbo.

Internet on the QL – Part II (Native hardware)

by Phoebus R. Dokos
B.Sc MIS

1. Introduction

Let's start the second part of the series with an apology. Due to oversight, a new baby, increasing amount of work and other life happenings, I did not upload the compressed files for the last article. This, has now be corrected. Refer to the previous article's section 8 for the appropriate addresses. (Enough blah-blah; let's continue with our series - Ed.) *[- **no that was NOT the Editor**]*

This month we will connect our real QLs (well some of them at least) to the internet with a choice of emulation, native access and a different operating system (Shoestring Linux). Wherever this is feasible, we will break each access method in three major areas (as previously). For the emulation solution, as well as with the Linux solution however, we may have additional capabilities which we will cover in turn.

2. Required hardware and software

a. For the emulation solution, you will need any standard QL with at least 768K of memory, a hard drive, a modem and at least a Hermes (superHermes lite or superHermes recommen-

ded). For internet access to have any meaning, I recommend that you use at least a Gold Card (SuperGoldCard recommended). As for basic software, you will need PC Conqueror Special Edition with MS-DOS 6.22 or compatible (FreeDOS 8 and DR-DOS 7.03 have both been tested and found to be working)

Note: Unfortunately QDOS Classic Amiga and Qx0 systems are not covered, as it seems that PC Conqueror requires a real IPC in order for serial comms to work. The software works otherwise, but without access to the modem, there's not much point, is there?

b. For the native (soQL-PPP) solution, you will need any QL with enough memory (except a Qx0 - see below), a modem and decent (see Hermes) IPC. In principle all the requirements for the emulation solution above.

Note: soQL-PPP works on the Qx0, however the special terminal program will not appear. I tried any possible method and Jon Dent kindly sent me soQL's sources to try and change, but to no avail so far. So that leaves Qx0 out for the time being.

c. For the Linux solution on the other hand, only a Qx0 will do. A complete Linux package is not required; even a RAMdisk based one will do, however a full installation is recommended. 32 Megabytes are definitely recommended - more if you have a Q40i or Q60 -.

3. PC Emulation

There's certainly credit due to Digital Precision for the quality of their PC Conqueror SE program. Little did Freddy Vaccha know that his product would be used to access the World Wide Web almost 15 years ago, when the program came to the market!

3.a Overview

There are many programs available to browse the net on a regular PC-XT. Of these three suites are the most complete. These are:

- Arachne - A graphical browser (yes it works on the QL as well in CGA mode!). Freeware
- Nettamer - Graphical browser (CGA mode as well). Commercial
- Bobcat - Text based browser/FTP/Telnet/Email etc based on DosLynx. Freeware

Arachne is painfully slow to set-up and equally taxing in using, however it is relatively easy to use. However because of its response on a QL, a decision was made to cover only Bobcat as it is both fast, familiar (since it is based on lynx, the usage tricks covered in the previous part are relevant here as well) and small. Nettamer was not looked at, as it is a commercial product.

There are a couple more DOS Internet suites, these are WebSpyder (based on Arachne, provided with DR-DOS 7 from the then Caldera and still available on FTP sites) and Webboy from IBM (A commercial product of very good quality). However, both require VGA graphics to work, and although modern QL systems are definitely able to display VGA graphics, there is no emulator that could do that. As a result, these suites are only mentioned here for reference.

3.b Preparing your PC-Conqueror installation

The author of BobCat has done a magnificent job, making the installation painless, however as a user, you will need to prepare your PC-Conqueror installation accordingly to use it.

First of all, remember that PC Conqueror's serials are reversed. This made sense in old QL setups as most printers were serial, but on modern QL systems that have Parallel ports, that can be a nuisance. If you cannot remember to switch to supervisor mode every time and switch your COM1 assignment, better connect your modem to SER2. It is of the utmost importance to realise that for internet access, you will need proper serial ports. Those, only Hermes and superHermes (lite) can give you; although internet access may work for a bit without one of them, I would definitely recommend at least Hermes, for peace of mind.

Please note, that PC Conqueror does not know anything about the sH SER3, nor its redirection abilities. My guess is that it bypasses the QDOS calls for serial i/o, so, if you were expecting to use ser 3 as a ser 2 (via the `OPEN #n; "ser2\3...": close #n` commands), you better forget it. I suspect that a good hacker may be able to hack PC Conqueror and allow this, but at present it is impossible.

On the software side, you should be prepared to devote at least 20 Megabytes hard disk space to a virtual MS-DOS hard disk. This is a file that is stored on your hard drive and it is essential for operation, as neither program that were mentioned above (or just bobcat for that matter) will fit in just a floppy. Moreover, access of the hard drive benefits from the QL caching mechanism and it is a lot faster than even the fastest floppy. Especially for Arachne, where extensive disk use can be expected, this can lead to increased performance.

For people that have forgotten, how to prepare a MS-DOS partition on a PC-XT class computer (which is the case with PC-Conqueror), here's a short tutorial:

a. Make sure that, your MS-DOS (6.22 or higher recommended) boot diskette, contains at least the following files: `FDISK.EXE, FORMAT.EXE, SYS.COM` apart from the system files.
b. Run the PC Conqueror configuration program and assign a 20000 Kbytes MS-DOS file
c. Exit PC Conqueror and answer "Yes" on the question of whether you should create one or not
d. Once this is done, start PC Conqueror normally and boot from the floppy by using option 1.
e. You may need to tap ENTER once or twice when the "`Starting MS-DOS...`" Message appears. For some reason PC-Conqueror waits a bit when it first starts.
f. On the `A:\>` prompt, type FDISK and press ENTER
g. Select Option 1 and then hit ENTER twice. The system will restart (PC Conqueror may crash here, so abort it and run it again as with step d.)
h. Once you are back to the `A:\>` prompt, type: `format c:/s` and press ENTER
i. You will be asked to confirm your choice. Once formatting is completed, restart Conqueror and select option W (to boot from Winchester).
j. Hard drive preparation is complete. You should copy your DOS system files in a subdirectory named `C:\DOS` or `C:\MSDOS` etc. and update your `Config.sys` and `Autoexec.bat` files accordingly.

Note: For some reason, `EDIT` (the DOS editor) doesn't work on PC Conqueror with my version of MS-DOS (although it works elsewhere) so I used something different instead.

As stated in step j. above, you will need to update your `config.sys` and `autoexec.bat`. If you don't have any, here's how to create them.

Type `copy con autoexec.bat` and then press ENTER. Note, that this is direct editing the file without a possibility of correction once each line has been entered, so be careful, otherwise you will have to do it all over again. Of course if you have a working DOS text editor, this can be avoided!

Next type:

`@echo off` and press ENTER

`prompt $p$g` and press ENTER

`path=c:\;c:\dos;c:\dialnet;c:\tools;` and press ENTER

Next press CTRL and Z. That will close the file.

To create a `config.sys`, you will have to type: `copy con config.sys` and then press ENTER

Next type:

`FILES=50` and press ENTER

`BUFFERS=50` and press ENTER

`SET COMSPEC=C:\COMMAND.COM` and press ENTER - This will make sure that the correct command.com is always read and that the message: `Cannot load command.com - System Halted` is avoided. Press CTRL-Z as per the autoexec.bat instructions.

Note: You may also need to include a `SHELL` line if you encounter the message: Out of Environment space. For more information, look at the bobcat readme file.

3c. Installing BobCat

First of course you will need a copy of Bobcat. This is obtainable from **www.fdisk.com** or from my website (see end of article), as well as via snail-mail from me. Next you will need to install it. The steps to do that are as follows:

a. Fire up your PC-Conqueror and start with the 'W' option.
b. Type `md c:\dialnet` and press ENTER
c. Type `cd\dialnet` and press ENTER d. Insert the bobcat disk in flp1 (Drive A: for DOS)
e. Type `copy a:bcat-e07.exe` and press ENTER
f. Once the copy is completed and you get back your `c:\dialnet>` prompt, type `bcat-e07 /y` and press ENTER. This will decompress bobcat and its sub-applications and will create the appropriate subdirectories. On a SuperGoldCard with the "SuperFast" option of PC-Conqueror enabled, you will have to wait approximately 15-20 minutes for that to complete.
g. Done!

Next you will need to instruct bobcat as to your username, password, modem etc. To do that you will need to run a batch file aptly named "`newuser.bat`". To run it, type: `newuser` and press ENTER.

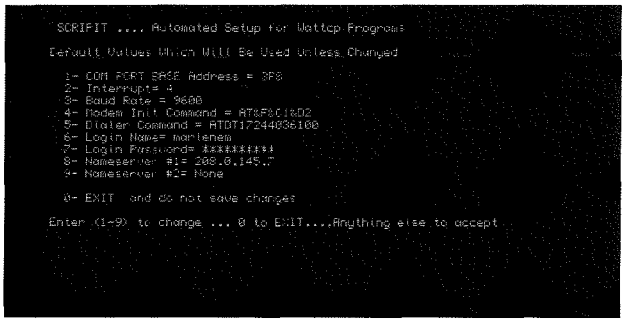
You will be presented with a screen with 10 options. Pressing the appropriate numbers on the keyboard you can make changes. You will need to change:

a. The comms settings (options 1, 2 and 3). Set it to: Combase: 3F8 (Com1 as PC Conqueror only supports that port), Interrupt: 4 (Com1) and Speed: 9600 -This is the maximum supported by PC-Conqueror-.
b. Modem Initialisation string and phone no.

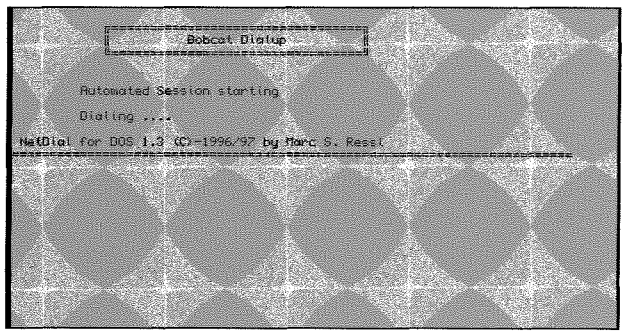
(options 4 and 5). Change them to a setting that suits your modem (ie for Central and Eastern European countries a good idea is to add X3DT to the Init string so no dialtone is expected). As for the phone no, remember to prefix it with ATDT or ATDP if you have a pulse phone line and the phone no of your ISP.

c. Then you need to enter the specifics for your internet account (options 6 through 9). You will need to enter your username (usually the left portion of your email address, up to but not including the '@' character), your password and then your provider's Nameserver (DNS server) addresses. You should enter at least one (and certainly both if you have them). That information will be provided by your ISP. Although, theoretically, for modern connections, this shouldn't be needed, I have found that bobcat will not work with out it, so make sure you enter it!

d. Next you will need to press ANY key except 1-9 or 0 in order to save your changes. Answer Y to the prompt and wait until you return to DOS.



Bobcat new user setup



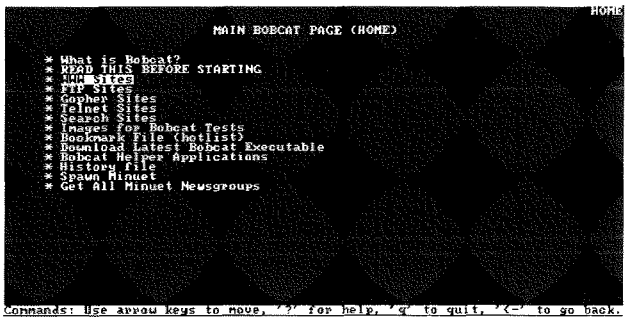
bobcat dialing the net

```
#Standard Generic Script to get you started
#see the \scripts directory for more samples to use to solve scripting problem

send "AT&F&C1&D2\r"
recv 15000 "OK"
send "ATDT17244036100\r"
recv 75000 ":" # this should identify query for either "login:" or "name:"
send "~~~~~~~~\r"
recv 60000 "sword:"
send "~~~~~~~~\r"
#recv 6000 ":"   # See NOTE 1.. here selection: or choice: , both end in :
#send "2\r"      # See NOTE 1 In my case this selects option  ppp
recv 60000 "}" # this "}" identifies ppp as having started on server

# NOTE 1: Remove the send 2/r and recv 6000 lines if your server does not need
#any furthur input after password and automatically starts ppp. Change these i
 your server requires something different.
#
```

bobcat netdial.scr file



bobcat main menu

You are now almost ready to run bobcat. First you have to verify if your ISP presents you with an option to start PPP during login. To do so, execute `bcatdial.bat` by typing `bcatdial`and pressing ENTER. If you only see the username and password prompts and then spurious characters and finally the modem hanging up, you will need to edit a file named `netdial.scr` and add two ' # characters in front of lines 11 and 12 (blank lines count as well for that). Once this is done, execute bcatdial again, and you are ready to browse the web, send email, do telnet sessions etc.

You can also skip the www browsing altogether and use the rest of the "helper" applications included in the bobcat distribution to ftp, irc etc. Refer to the documentation accompanying the bobcat installation (in the DOCS subdirectory).

4. Native access (soQL-PPP)

Jon Dent's suite, albeit still unfinished and only working with email at present, allows for faster access (up to 57.6k on SuperGoldCard QLs) than the PC Emulation solution and at present is the only native alternative for real QLs (if for example you do not have PC Conqueror which is still a commercial product).

4a. Requirements

Apart from the software itself, you will need a QL with at least 256K of memory. Theoretically soQL should work with 128K only as it is very small, however with the application programs taken into consideration, that is rather unrealistic. I recommend at least a Trump card and a Hermes or superHermes IPC. soQL-PPP has been tested with Gold Card, Super Gold Card and Trump Card QLs as well as with a QXL II, QPC, uQLx and QemuLator. It works great with all of them. The only problem that I have seen is with the Qx0. I have not tested it with freeQDOS or QDOS Classic and I will strive to have that information for you soon, however I can guarantee that it will NOT work with SMSQ/e on the Q40 (It works

fine with SMSQ/e everywhere else however!). Note: The problem with the Qx0 is ONLY with the terminal, which for some reason will not work properly although it loads. Maybe it is just my system, and so I welcome any input on the matter.
Of course you will need a Modem and a internet account somewhere!

4b. Installation and Setup
Installation of soQL-PPP consists of simply unpacking the zipped executable to the root directory of a floppy (yes it works from a floppy) or a hard disk. For a less uncluttered root - in the case of a hard drive or RomdisQ - you could create a simple directory - `say win1_soQL_` - and unzip there with `ex unzip;'flp1_tcpPPP_zip -d win1_soQL_'`

There will be 4 main subdirectories created at the location where you unpacked tcpPPP_zip:
- APS
- DOC
- SRC
- TCP

There will also be additional directories under these, the most important being `MAIL` and `ML` under `APS` and `DFT` under `ML`.
The MAIL directory contains the boot files for soQL as well as the main applications. The boot files will probably need to be edited to reflect your choice of serial port as well as directory structure.
Additionally the DFT directory contains the actual mail header for your outgoing email messages, the signature file as well as the actual email draft (this can be changed later on).
Moreover, under the directory TCP you will find a file named DNSRecords.txt which will have to be edited for mail reception and sending (soQL-PPP does not do DNS resolution yet and therefore DNS records have to be manually entered).
By now and if you have read the previous part, the whole situation starts to look vaguely familiar. Relax, you are not losing your mind! Indeed, the software included with soQL-PPP are special versions of the fetchpop and qlmailer applications described in section 6 of part A (QLT Vol.9, Iss.6 - p.29).
First, we need to edit the boot files. We begin with (assuming that the installation directory was `win1_soQL_`) `win1_soQL_APS_MAIL_boot`

The file should then become (only lines changed are visible for page economy):
```
140 Dev$ = 'win1_soQL_' :Tcp$ = Dev$ & 'TCP_'
:ApsMail$ = Dev$ & 'APS_MAIL_'
```

Next we should edit `win1_soQL_APS_MAIL_bootPPP` which should become (as above only changed lines are shown):
```
140 Dev$ = 'win1_soQL_' :Tcp$ = Dev$ & 'TCP_'
:ApsMail$ = Dev$ & 'APS_MAIL_'
```
Additionally line 180 should reflect your username (currently set to jondent) for your internet account.

You should also change line 260 to reflect your choice of serial port. For superHermes ser3 (the default), the line is:
```
260 para$ = " q t d ram1_tryDNS r "& Tcp$ &
"ipReceiverPPP_exe s ser3hr_b38400 x "&
Tcp$ & "pppSend_exe"
```
However, if you use some other port and/or not superHermes, you should assign the baud rate in advance and just enter the serial port as per standard QDOSMS conventions).
For example, for QXL's SMSQ/e serial port 2, the line should become:
```
260 para$ = " q t d ram1_tryDNS r "& Tcp$ &
"ipReceiverPPP_exe s ser2hr "& Tcp$ &
"pppSend_exe"
```

Next, we will need to edit the `DNSrecords.txt` file, found under the directory, `win1_soQL_TCP_`. This file stores the servers that will be used by the applications. Theoretically if, say lynx were to run with soQL-PPP you would have to enter the domain name resolutions here in order for it to work. This file contains the following entries:
```
localhost 0x7f000001
mail 0xC2E60008
DNS 0xC1F7F514
DNS2 0xC1F780A
studio.woden.com 0xc29a343c
post.demon.co.uk 0xc2d9f239
pop3.demon.co.uk 0xc2d9f216
pop.gmx.net 0xD5A54014
mail.gmx.net 0xD5A5413C
pop.freesurf.ch 0xC2E60008
smtp.freesurf.ch 0xC2E60008
```

Each line, contains two entries; the first being the name and the second being the IP address. If you are familiar with IP addresses, this will appear a little odd at first, however after close examination, it is easy to figure out that the hexadecimal number is the IP address decimal numbers, converted to two digit hex without their separating dots.
For example, localhost is normally 127.0.0.1 which converts to 127 = 7f, 0 = 00, 0=00 and 1 = 01.

The addresses listed there are put as examples by Jon Dent. You should replace them with the addresses provided by your ISP as follows: Let's say we want to use mail.dokos-gr.net (which for the purposes of this article is an ISP and not me!). The ISP will tell you that this address, resolves to: 66.235.203.183. We should then convert that IP address to hex and add an entry to our file as follows:

```
mail.dokos-gr.net 0x42EBCBB7
```

If you have more servers that you will use, you should enter them, line by line in that fashion. You can go ahead and delete all original entries except localhost and mail (localhost is always the same -127.0.0.1- for all machines and mail should be set to your mail server regardless of actual server name). In our case the line will become:

```
mail 0x42EBCBB7
```

If you can leave the rest of the lines as they are now, it really makes no difference.
Once this file is edited, you will be ready to use soQL.

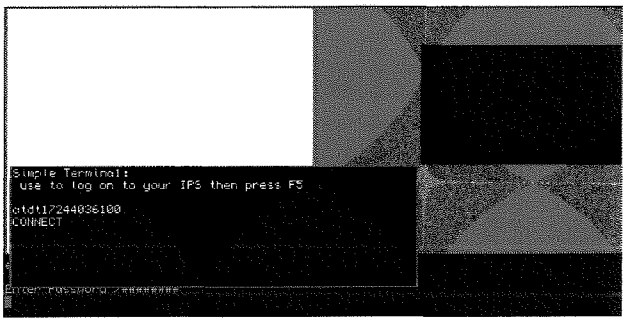
4c. Using soQL - Sending and Receiving e-mail

Upon startup (which is invoked by doing `LRUN win1_soQL_APS_MAIL_boot`), soQL will ask you, your email password. Then it will present you with the dialer screen. You should type:

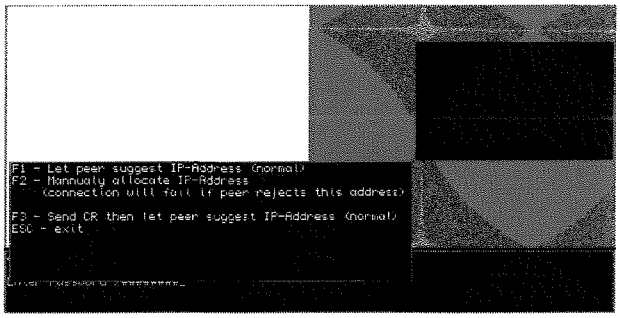
```
ATDT yourISP'snumberhere
```

then press ENTER and one key (for example SPACE). The reason for that last keypress can be found in soQL's documentation that states that ENTER is not sent until one more character has been inserted into the buffer.
Once you see the connect screen, you should wait for the username prompt, enter it (be careful not to make any mistakes), then the password prompt, enter that also and wait until you start seeing spurious characters in the dialer window. Once you see the first couple right brackets '}', you should press F5.
Once this is done, you will be presented with a screen for IP assignment. For most cases, pressing F1 will do the trick. Return to the S*Basic prompt with CTRL-C and then you are ready to use pop and smtp. Since the email applications are essentially the same with fetchpop and qlmailer, the user should refer to section 6 of the last part (pp. 29-31, QLT v.9.iss.6), with certain differences.

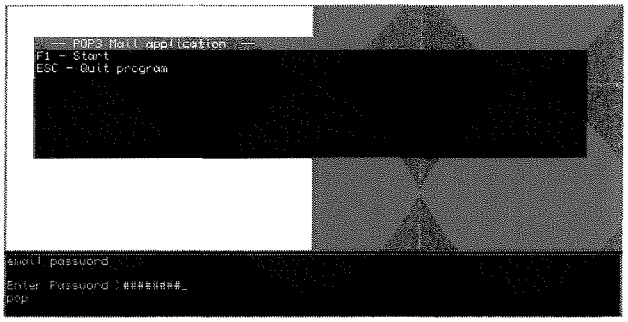
a. There's no need to set up environment variables as the applications are called by the soQL procedures (see the bootPPP contents)
b. Receiving email is handled by the pop procedure. By typing only `POP` on the S*Basic window, you will presented with the POP application window. You should then press F1 before starting to download your messages.
c. Sending email is handled by the sm procedure. After typing sm, you will be asked the recipient's email address and then the fully qualified filename of the file that holds the email's text.
d. Disconnection is not handled automatically. You should just turn off your modem!



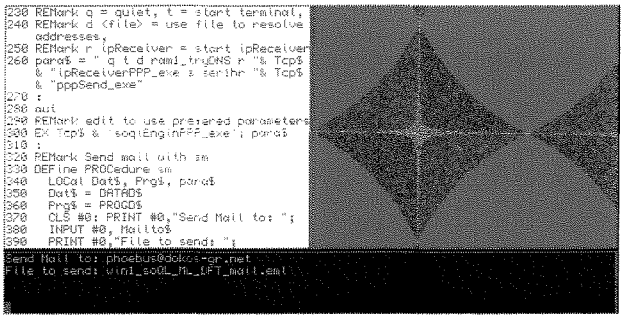
soQL Simple Terminal Dialing



soQL Auto IP Assignment



soQL POP mailer startup



soQL SMTP mail procedure

5. Shoestring Linux access

5a. Overview

Shoestring Linux solves all the problems of Internet access on Native QL hardware and adds features not previously available to us poor QLers. To the matter at hand (Internet Access), it provides access to xDSL/Cable connections, LANs, ISDN and Dial-up. The downsides are that it is memory-hungry, very slow at times, difficult to install and not very simple to use. Of course it only works with the Qx0 line of machines as they are the only ones with MMUs. I will attempt to walk you through a basic installation (which will be completed on the next part of the series due to the lack of page real-estate) and then we will setup two types of connections. A dial-up and an Ethernet based.

5b. Requirements

You will need a Q40, Q40i or Q60 with at least 32 Megabytes of RAM, a decent size hard disk (2 Gbytes free for Linux seems nice!) for a complete installation - you do not need all that if you only do a internet-only installation of Linux, however this is more hacking than the average user may need, so we will go with the full install instead. You will also need a CD-ROM (required for a full installation), and/or a fast internet connection if a cd rom is not available (the complete Shoestring Linux download is quite large; some odd 650 Megabytes!). Of course if you don't have that kind of bandwidth, you can always drop me a line and (preferably a blank CD-R and couple of HD diskettes) as well as postage and I can send you a Linux CD together with the necessary boot files for the installation and startup. If you plan on accessing the internet with a broadband connection, you will need also an Ethernet card (available from D&D) - or a modem / ISDN box - and of course an internet account!

5c. Starting the installation

You will need three main files apart from the actual Linux CD. These are:

- lxx (The Linux loader executable - a QDOS program)
- vmlinux (the Linux kernel image) and - optionally although highly recommended -
- ramimg.gz (A compressed RAM based filesystem image)

To start Linux you need to put all of the above on a hard drive (or a ramdisk) and type:

```
EX win1_lxx; '-k win1_vmlinux -m 32 -r
win1_RAMIMG.gz -- root=/dev/ram
parport=0x278,0x378'
```

Please note the `parport` option. This makes sure that the parallel ports are polled instead of interrupt based (Which can cause problems). Also note that there are two of them. That is the case if you have a multi I/O (like the ones I was selling for a while and can possibly be still obtained by D&D) with two parallel ports. If that is not the case you should type:

```
EX win1_lxx; '-k win1_vmlinux -m 32 -r
win1_RAMIMG.gz -- root=/dev/ram
parport=0x278'
```

Also note the `-m` option. This defines the memory that is available to Linux. If you have more than 32 you should amend that accordingly (ie for 128Megs this should become `-m 128`

Once the above line has executed, you will see a quick QDOS window aptly named lxx and then the screen will completely change. You will see Tux the penguin in the upper part of the screen and a long series of messages which you may disregard for the time being.

You will then be presented with the login prompt, to which you should enter 'root' (without the quotes). Root is the standard name of the superuser on Unix and compatible systems. Once Linux has been installed, you should create a regular user (that will have privileges for use of the system but not administration - it is safer that way).

WARNING: The next steps will potentially totally erase your hard drive. If you haven't taken a backup of your WINx_ drives, reset the machine and do so before continuing.

NOTE: If you are using QDOS Classic instead of SMSQ/e you will need a second hard drive to install Linux on. You should make sure in that case, that you have a IDE controller with two channels, as you won't be able to install a CD-ROM. In any case, having a devoted Linux HDD always makes a lot of sense.

If you have read the above, you are ready to proceed. First, a word about drives and filesystems on Linux (if you are an expert, bear with my explanation as it is severely watered-down!):

There's only ONE file structure under Linux. You can have more than one type of filesystems (ie ext2fs, ufs, msdos etc) and all are accessed using the same tree structure. In QDOS terms, you only have a win1_ that you see. Each drive (and for that matter device), attaches itself to that tree after it is instructed on the location where that should happen. Imagine for a second you have a second QDOS partition, you normally call win2_. In Linux terms, you would create a

directory under the root (/) for example named win2 and attach (a process called mounting) the partition to that directory. From then on, when you would change directories to /win2/ you would be accessing the other partition. All devices known by the system, are found under the directory /dev/. They are seen as files on a regular directory command (ls under Linux) but in reality, they are links to the driver/device. Physical hard drives are named hda, hdb, hdc and hdd. Partitions on these drives are numbered from 1 and the number is added to the name of the device. So partition 1 on hard drive 1 would be hda1, partition 2, hda2 and so forth. Remember that because we are using an IDE controller, we can have at maximum 4 IDE devices (one of which will be a CD-ROM). Assuming only one channel, the hard drive would be hda and the CD-ROM hdd (The CD-ROM has no partitions so it is only addressed by /dev/hdb in that case)

We need to partition the drive before we can use it for Linux. We should invoke the partitioning utility, named `atari-fdisk`

Note: Commands and files under Linux are case-sensitive. Make sure that you type what you see here exactly as it appears, otherwise it won't work!

Assuming that we are partitioning the first hard drive, type `atari-fdisk` and press ENTER. If you are partitioning some other hard drive, you should type `atari-fdisk /dev/hdx` where x = a, b, c or d (First, second, third or fourth hard drive). You will be presented with a prompt " `Command (m for help):` "

You should enter a `p` (which will print your current partition table). The next (and last) part, will pick up from here, finish the installation of Linux and go on setting up the internet connection and deal with each program individually.

6. Links

The files described here were downloaded from:

1. **http://www.fdisk.com** (Major DOS internet resource)
2. **http://www.geocities.com/SiliconValley/Bay/2602/q40.html** (Old Q40 Linux website by Richard Zidlicky, contains pointers to the loader and precompiled kernels etc.)
3. **https://sourceforge.net/projects/linux-q40/** (Shoestring Linux website)

Additionally all the files mentioned (including a compressed virtual hdd for PC-Conqueror) can be downloaded from

http://uqlx.dokos-gr.net/ql-net/

Are we having any Starters?

by John Perry

We have heard a lot lately about software like QDT and Launchpad, which give your QL a makeover. These programs do to a QL pretty much what Windows does to a PC - pretty graphics, icons and a click-to-run system for programs which saves you having to remember long winded EXEC commands to start your programs if you have a hard disk or RomDisq or similar mass storage system.

These types of programs don't half help to cut down on the amount of typing you need to do and of course they make your QL systems "prettier". But they are a drastic solution - they take over the machine as far as the user is concerned. In terms of its origins, the QL is a command line driven computer and we all originally used type in commands to control and run everything rather than these fancy point and click systems and are well used to the "command" way of doing things.

Over the years, most of us (by no means all though) have added and got used to the pointer environment in one form or another, whether we used the old QRAM, the more recent QPAC2 or just a basic pointer environment as supplied with programs we've bought from the QL traders. Now that the pointer environment is built into SMSQ/E and freely available for QDOS systems, more and more people are using it and the general assumption seems to be to expect us all to move into Windows-style front ends for our QLs.

While I'm a happy Launchpad user, it did take a bit of getting used to and I would make one fairly bold statement: I use a QL "largely because it's not Windows."

I've heard from plenty of QLers unhappy that GUIs (Graphical User Interfaces) are becoming almost imposed on them against their will. That might be a rather drastic comment, but I'm sure that there will be plenty of people for whom systems like QDT will be overkill. For some people, the "command line" approach maintains a feeling of power over the machine (you can do pretty well anything with a few basic commands) and for some, a GUI they are not happy with just gets in the way.

In recognising that there are plenty of people using pointer environment in one shape or another, I went in search of less radical alternatives, program starters which cut down on the typing involved but don't take over the machine in the way that that the GUIs tend to.

In this review I'll look at four such programs. These are either simple task launchers or small buttons which operate along the lines of a Start menu in Windows, for example. All of them are available as freeware from PD libraries and the usual websites carrying free QL software.

1. Launcher by Oliver Fink
2. DEV Manager by Dilwyn Jones
3. Qascade by Jonathan Hudson
4. QStarter by Dilwyn Jones

Launcher

The first of these (Launcher) comes as one part of a package of utilities by Oliver Fink. I got this on disk Gen175 from Dilwyn Jones's PD library and the other packages are a colour stipples picker, a binary/decimal/hex converter, a utility to help with renaming files, scantree which creates a text file with a list of directories on your hard disk and a system info utility. All are pointer driven, in Oliver Fink's usual style. Launcher is the program I'm interested in for the purposes of this review.

This is a simple little program called LAUNCH_EXE which lists executable files in a given directory. Just click on a program name and it is executed. That's it, nice and simple. Couldn't be easier!

There are options to configure colourways for the program (usual four QPAC2-style colours only, it is too old to know about colour drivers), the starting directory name, its job name and whether or not it starts as a button in the QPAC2 button frame or starts in its normal menu layout. Figure 1 is a screen dump showing it has the usual move, resize and redraw icons. If started 'sleepy' (i.e. as a button in the QPAC2 button frame) the fourth item is a 'ZZZ' or 'sleep' button, or it becomes an ESC button if not started in 'sleepy' mode. There's no facility to change the directory after the program has started - it assumes you follow the standard practice of keeping all your executable programs in one named folder on your hard disk, the name configured. If you want to display another folder, you have to reconfigure the program.

There's not a lot to comment on with this program. Once configured to your liking, it's a simple to use program which does the one thing it's meant to do very well. It only shows the filenames of the programs which can be started with it, there is no facility to give a more 'meaningful' name to the programs. It also doesn't do subdirectories. All the programs have to be in the named directory (e.g. win1_programs_ or win1_john_exec_, although that won't be an issue unless you group your programs into various sub-directories such as having a folder called win1_progs_ and then subdirectories such as graphics, accounts, wordpro and so on:

win1_progs_
win1_progs_graphics_
win1_progs_accounts_
win1_progs_wordpro_
win1_progs_database_

In such a case you may have to resort to having a separate copy of Launcher for each of these folders. I guess you could probably fetch it into memory and execute several copies from that using a facility such as HOT_RES in the hotkey system.

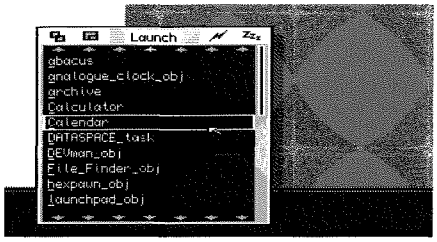


Figure 1: Oliver Fink's Launcher program

DEV Manager

DEV Manager is a rather different beast and although it has some of the principles of Launchpad by the same author, it is a text-only and much easier to use beast, although the editing and setup program is a bit overwhelming at first until you get used to it. It used to be a commercial program but has been around for many years and the author has now made it freeware and it can be downloaded from his website at **http://homepages.tesco.net/dilwyn.jones/software/freeware/freeware.html**

The package consists of two programs, the DEV Manager itself and a program to edit the list of programs. The screen layout is pretty old fashioned and non-standard, reflecting its age, but quite functional. The main window has a list of programs that DEV Manager knows about and a column of buttons down the left basically selects what you can do with those programs. The simplest is EXEC - this is just like an EXEC command in SuperBASIC. EX;"..." lets you pass a command to the program - some programs can have their startup defaults specified in this way, e.g. EX win1_xchange_xchange;'256' makes

Xchange start with 256KB of memory. Basically, just think of EX;'..' as being like a Toolkit 2 EX command with a parameter and you'll understand what it's about. It also has a facility to let difficult programs like Quill have their memory grabbing antics tamed in a similar way to the EXEP command does in BASIC.

DEV Manager can store a list of defaults for each program such as the DATA_USE default and PROG_USE setting. It can also cope with DEV, SUB and a few such 'pseudo' devices by keeping a list fo their respective settings for each program, although you have to edit these in the DEV Editor program. DEV Manager has the facility to 'Pick' a program (select it by job name rather than use the usual CTRL C to switch between programs) and/or SET the settings for the program if it's already running but another program has changed the settings since it started. Although DEV Manager can't add or delete entries without using the separate editor program, you can VIEW the settings from within DEV Manager.

It also has a rather weird facility for directly editing the names of individual devices. I'm not quite sure why you'd want to do this since there are already commands such as RAM_USE, FLP_USE and DEV_USE to 'legally' change these. You can safely ignore that type of facility - it's in the NAMES button if you really want to try it.

The DEV Editor program is a bit of a nightmare if you intend to use all possible facilities since it just seems to be an endless list of entries for each program. In practice, most programs won't need any special settings so really you only need the program's filename (e.g. win1_progs_quill), a display name (e.g. Quill) and the 'pick' or 'job' name, the name which is listed for the program by a JOBS command, used for picking an already running program. Anything else can be left blank. In use, DEV Editor is a bit like a database program. You have a list of programs and fields for each of the possible settings. Unused facilities can simply be left blank. You can step through the programs using First, Last, Next and Back buttons, Insert new programs into the list, Sort the list and so on. It is a frightening beast of a program at first, but one you get used to pretty quickly as long as the first impression hasn't put you off.

DEV Manager falls between two stools. It appears slightly complex for the task in mind, being about halfway between Launcher and something like Launchpad. It has all the facilities you're likely to need (you can set different DEV, SUB, and all sorts of settings) but at the expense of complexity. If you have a large list of programs it can get tedious since the screen display cannot be resized for high resolution displays (Launcher has a resize button, DEV Manager does not) so long lists have to be scrolled. DEV Manager might appeal if you want something a bit more advanced than Launcher without going all the way for QDT or Launchpad.

Figure 2 - DEV Manager

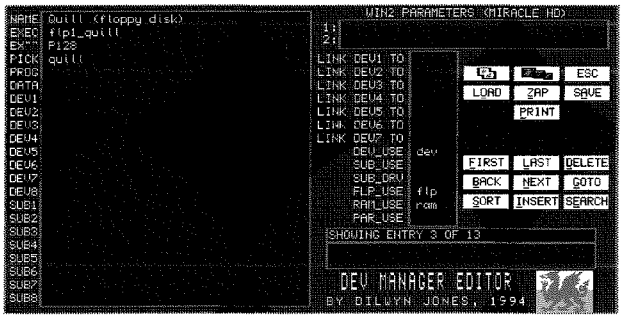


Figure 3 - DEV Editor

QASCADE

Qascade is a simple little program starter button written by prolific software author Jonathan Hudson. Up to Jonathan's usual high standards, this program lives in the QPAC2 button frame and provides what amounts to a 'Start' menu. The package can be downloaded from his website at **www.daria.co.uk** or obtained from the usual PD library sources. The package comes complete with the 'C' source files, unlike the other systems reviewed here. It does, however, mean that you have to separate the sources and the files you need just to run the program on a day by day basis. You will also need a plain text editor (just about any freeware editor such as QED will do) to create and edit the text file which contains the details of the programs to appear on the Qascade menu. Although called Qascade, you can change the title which appears as the button frame name, so Windows enthusiasts can call it START if they really must.

"Have a dig at Windows" time: When stopping or turning off a PC, why oh why do you have to go into a menu called START in order to stop a PC???

The list of programs known to Qascade is held in a text file called Qascade_rc. This is a list of programs and menus. Items in a Qascade menu can call other menus, a bit like Superbasic can call other procedures. You can declare a menu name with a line like:

```
MENU;Database
```

This defines a sub-menu called Database where you might keep programs like Archive, Data Design, Flashback and Easybase all in one tidy group together. The end of the menu is declared with a line containing the word MEND. In between you have a list of commands such as:

```
EXEC;Viewer;Viewer_obj
```

The EXEC tells Qascade that this program should be executed. The part after a TAB (or a ';' if the editor does not support real tabs - Tabularly Challenged is the term Jonathan uses - is the name which appears in the list in Qascade (Viewer in this case) and the filename, viewer_obj in this case and the drive name can be omitted if to be launched from a default drive.

There are other commands such as SBAS for starting SBASIC programs, ETHG for thing execution and F12 for starting data files with their associated programs via the File Info 2 application if you have that on your system. For example, if you normally use QED to edit your plain text files, you can set up File Info 2 to associate files having names ending with _TXT with the QED editor program, so that if someone tries to execute a plain text file, what happens is that the QED is started and loads the plain text file automatically. This is very useful with file viewers.

You can generate some good looking and functional menus, neatly laid out complete with title lines and so on, in a selection of (mode 4) colours.

To start Qascade, you need to specify where it needs to look for the qascade_rc file. This needs a rather fearsome looking command in your boot program such as:

```
EX win1_qascade_qascade; "START
 <win1_qascade_QASCADE_rc"
```

In that example, the Qascade program is held in the directory win1_qascade. The part in quotes is the information needed to determine how Qascade starts. The first word is the name given to the Qascade button in the button frame - if you want to be like Windows, call it START. The second part (preceded by the '<' symbol) is the filename of the qascade_rc text file - Qascade cannot start unless it can find this file.

Qascade is probably my favourite of the applications listed here, but you need to be confident about editing the Qascade_rc file, which is a bit like writing a small BASIC or Archive program. As long as you don't mind that, Qascade is an excellent little program. If you find editing the control file a bit difficult, you may prefer Launcher or Q-Starter. While Qascade only uses mode 4 colours, I gather Marcel Kilgus has hacked another version which can use the new window manager colours, that's only available from Marcel's website.

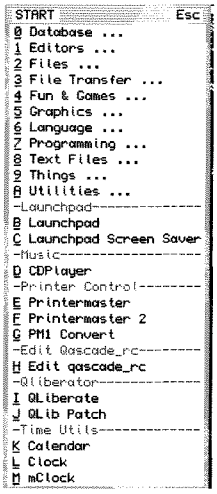


Figure 4 - Qascade

Q-STARTER

This program is a 56KB download from the author's website at

http://homepages.tesco.net/dilwyn.jones/software/freeware/freeware.html

In terms of what it does, Q-Starter is very similar to the Launcher program described above, but with a few extra bells and whistles. Q-Starter is one of the new breed of programs which works on anything that's got pointer environment, from a QDOS system to the latest SMSQ/E versions and is colour drivers and new window manager aware, so it can presumably use your personal colour schemes (from what I've read about in recent QL Todays) like other recent software.

It's a simple little program which lists files in whatever directory you configure it to search in. Unlike Launcher, it can cope with sub-directories so your programs can be grouped by type in separate subdirectories within a main directory. In fact, if you configure it to look in WIN1_ and to search sub-directories, it will look through your entire hard disk and find (albeit rather slowly) all programs on your hard disk. This can produce a long and unwieldy list scattered throughout your hard disk, so I don't really recommend doing this.

Q-Starter has the usual move, resize, redraw, sleep and escape items across the top and a copyright notice screen. It also has a very useful SORT command (which can only sort into alphabetical order, not by date or any other such luxuries), and the facility to enter a new drive name if you wish to list files in a different directory. It only allows you to manually type in a new name, there is no facility to use the menu extensions or any other means of selecting directories from a menu or list, but this is quite easy to use and adequate for those rare moments when you want to look at the content of a different directory to that configured.

Q-Starter starts as a normal program occupying about half of the standard QL screen. Its display is resizeable for height only. So if you have a high resolution screen you can make the visible list bigger before you have to scroll off screen. A nice extra feature might be the option of a two column list perhaps, possibly with one of the columns remembering which programs you have most commonly used recently and showing those as a 'shortcut' files list.
It has a 'sleep' or 'zzz' button, so it can be put into the button frame when not in use, as long as the QPAC2 button frame is there of course. The program does work on a machine with pointer environment but without QPAC2 if the button frame facility is of no interest to you.
Programs are listed by filename only, there is no facility to display separate names for the programs, which might be useful for programs not having meaningful filenames. There again, Launcher and Q-Starter are 'ad-hoc' listers, they catalogue a directory as they start so reflect the state of the machine at the time. Programs like DEV Manager and Qascade use lists defined by the user, so only known programs are listed whereas Launcher and Q-Starter can list all programs by looking at a directory and displaying anything of file type 1 (executable). Since only executable files are listed, Q-Starter cannot use File Info 2 to execute data files.

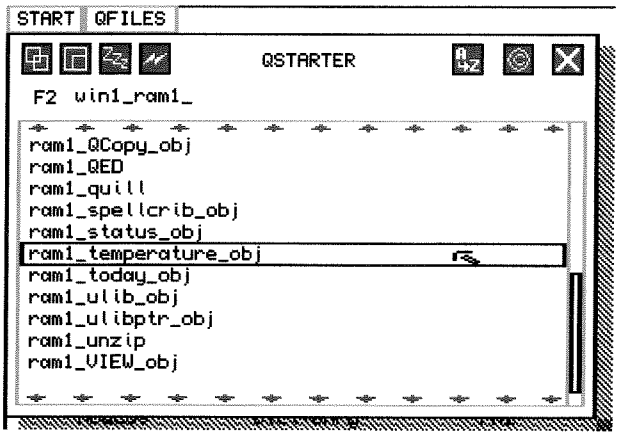


Figure 5 - Q-Starter

Decision Time

Having looked at all four programs, I have to decide which I'm going to use. My answer is not a clear cut one or another, as my choice would depend on what I need of such a program in given circumstances. All of them need pointer environment and toolkit 2 (pretty standard on most systems these days I would think). Most prefer you to have QPAC2 so that the button frame is available, although DEV Manager and Q-Starter can happily run without the button frame.

If you are looking for an ultra simple no nonsense program, go for Oliver Fink's Launcher. In the words of a famous advert, it "does exactly what it says on the tin" and nothing more. You get a few other useful little utility programs in the same package which you can ignore if you have no interest in them.
Q-Starter is very similar to Launcher in some respects, but with a couple of extra items such as the 'sort' command and the facility to display a different directory to that configured if really necessary. It can make use of the new colour schemes in recent versions of the operating system, unlike the other programs mentioned.
DEV Manager is the only choice if you need to use DEV and SUB and set defaults for 'awkward' programs and so on. It is a bit long in the tooth and its display is not resizeable, but it works well enough even if showing its age (about 11 or 12 years old now according to dates in the package). The DEV Editor program might put some off if you go by first impressions.
My personal favourite is Qascade, but that assumes you have the knowledge and confidence to be able to compose and edit the qascade_rc control file. It has all the options you need to create a very neat start menu and sub-menus. Its only downside is the need to edit and compose the control file and its slightly "unixy" feel in terms of syntax and so on, even though it's a QL program. Try Qascade, if you find you get on with it, I'm sure it'll prove best for the job. If you don't like Qascade, you would probably be better off with Q-Starter or Launcher.

Editor: Many years ago in Volume 1 of QL Today I wrote, tongue in cheek, an attack on the excessive use of buttons by some pointer environment enthusiasts. I even described one person's system as reminding me of a general's medals. My comments upset a lot of people, but they produced some fine and well argued articles in reply.
The QL community is a "broad church" and every user has his preferred way of starting programs. QL Today welcomes discussion on this theme, and John Perry has argued his case very well. Would someone now like to reply?
As a QL user who is attracted to the type of "minimalist" approach John suggests, I find QDT strangely seductive. The EasyPtr upgrade and QPC Print had to be my software priorities for this year, but should I now take the plunge and buy QDT? Or perhaps Launchpad? As there is nothing worse than an indecisive editor, please help me make up my mind!

HomeBrew SMSQE

by Duncan Neithercut

While smsqe can be bought from licenced suppliers for a token fee it is possible to keep up to date with the latest releases of smsqe for free if you are prepared to recompile it from the sources.

On the face of it this would appear to be a daunting proposition for anyone who is not a paid up assembly language programmer but in fact it is not too difficult to do with the correct tools. The sources for smsqe are available from The Official SMSQ/E Site maintained by Wolfgang Lenerz at **http://www.scp-paulet-lenerz.com/smsqe/.**

The current version of smsqe is 3.09. The sources and accompanying programs are downloadable as a 2.1 megabyte zip file. This takes perhaps 5 to 10 minutes with a dial up internet connection or less than a minute with a broadband connection. Once downloaded the sources need to be unzipped from their archive and installed on a hard disk. It is also possible to partially download the sources in several smaller zip files from the site. Each of these smaller files contains one source directory's worth of files.

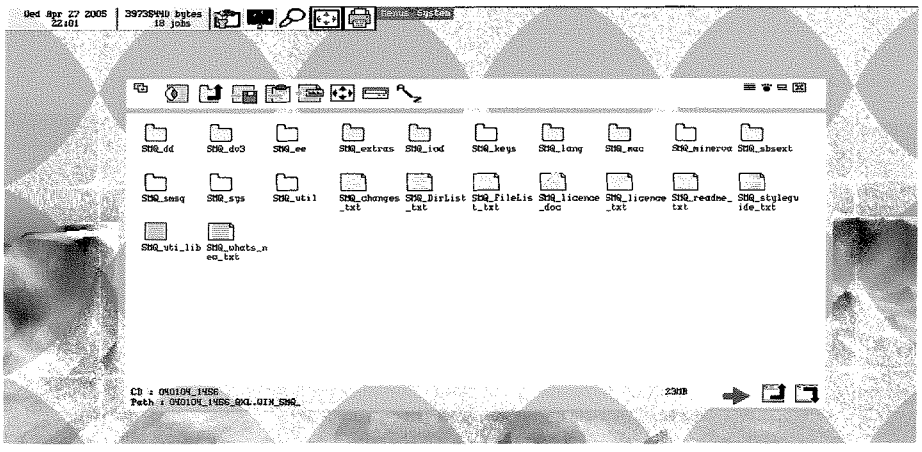
The complete sources for smsqe 3.09 comprise 1934 files in 104 folders and occupy approximately 6 megabytes of hard disk space. The sources for smsqe contained in this archive allow the recompilation of smsqe for all machines with the exception of QPC2. The smsqe sources for QPC2 have not been released on the web site. Probably because they contain commercial copyrighted additions such as those that integrate QPC2 into the host PC's Windows operating system. These additions such as the DOS device, the access to the Windows Clipboard or access to the PC's TCP/IP stack would be of little or no use for users of smsqe on native hardware. For owners of QPC2 this is no real hardship as upgrades to QPC2 and the smsqe for it may be downloaded from Marcel Kilgus site for free. In addition it would appear that only the correct version of smsqe for the current version of QPC2 may be run on QPC2. Playing about with the sources may therefore not be a safe option on this system unless your name is Marcel Kilgus.

The machines that smsqe may be built for are Goldcard and Supergoldcard QLs, suitable Atari machines, QXL cards and the Q40/60 hardware.

The first problem to solve once the zip file has been downloaded onto a PC or other internet capable machine is the transfer of the archive to the QL system. With the complete sources having a file size of 2.1 megabytes transfer on a floppy disk is not practicable.

There are a number of possible solutions. Firstly the sources zip file could be burnt onto a CDROM on the PC. This means that the target QL system if not a Qx0 will need a Qubide interface connected to a CDROM drive as well as a hard disk. To access the CDROM Thierry Godefroy's CDROM drivers are needed plus either QCDEZE or Wolfgang Lenerz qxlwin explorer.

Secondly, if on the PC there is a QL emulator such as QPC2 capable of using sernet in theory this may be used to transfer the source zip file to the target QL system. Finally, if the sources were downloaded in the partial package zip files it would be possible to transfer them to the target machine on several floppy disks.

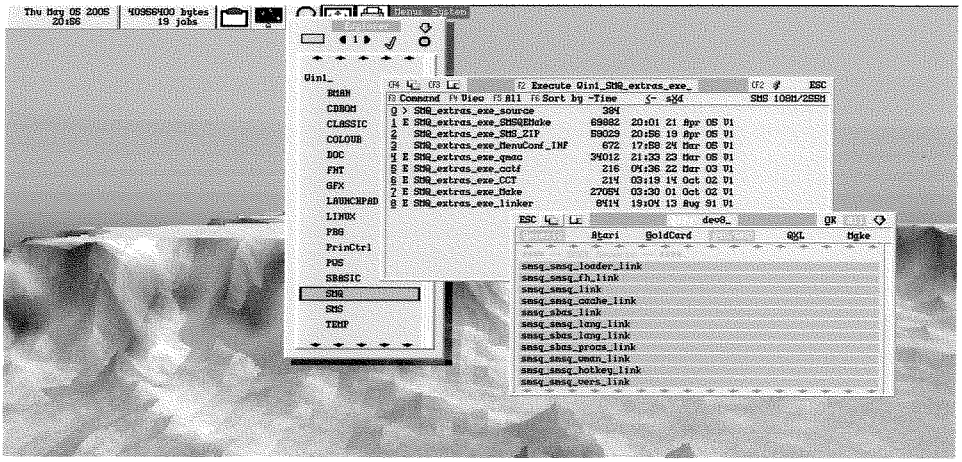


I used the first option of transfer on a CDROM as it creates a master copy of the complete downloaded sources on the CD in case anything goes wrong with the recompilation.

What next, once the sources are on the target QL hardware? Before starting to consider recompiling the next step is to make a backup of the entire hard disk on the QL system as a precaution just in case something goes wrong with recompilation and the resulting smsqe when tested does something very bad to your hard disk. Not that this is very likely to happen.

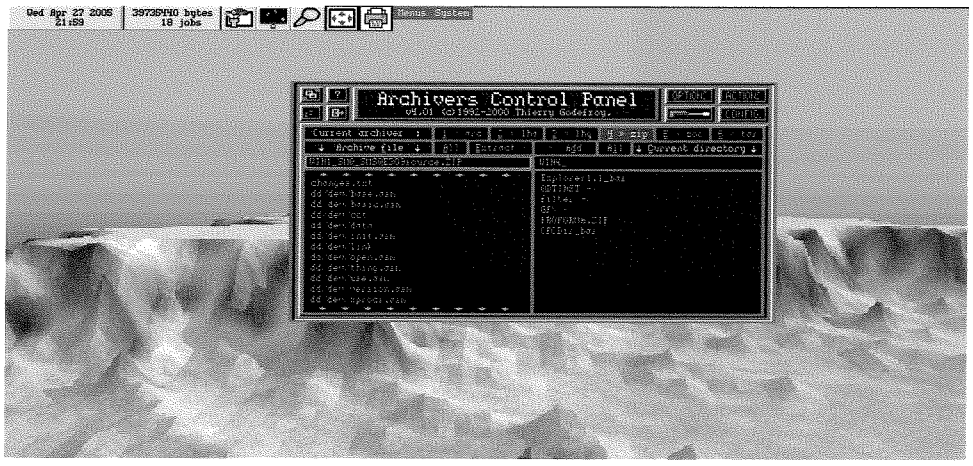
Unzipping the downloaded files is easy if the correct tools are available on the target QL. These are obviously unzip, the version I have used is 5.32. This when used along with another of Thierry Godefroy's indispensable programs, the Archive Control Panel makes for easy extraction of the source files to the hard disk. One problem that was noticed during this process was that an occasional file could be unzipped incorrectly. Unzip would report this error but with a rapidly scrolling window listing files as they were unzipped it was difficult to identify which file. The problem seemed to arise as a result of the size of the zip file.

The solution was either to sequentially unzip the individual directories from the main zip source file or to create a less buzy environment for unzip to work in. It seemed possible that in a multitasking environment other tasks claiming CPU time might just interfere with the smooth running of unzip. My Q60 usually has 16 routine tasks running after boot. These include Prowess and Proforma, Qascade, a screen saver manager, buttons to display time, memory consumption, jobs running, change the display size and or mode, and to launch file managers, access the scrap and to change print drivers. I don't know if this is typical or not. To make a clean environment simply required the removal of most of these jobs that were not needed for unzipping the file. Once this was done unzip appeared to correctly decompress all 1934 files into the correct 104 directories.



Next, it was time to read the manual. This is located in the documents subdirectory of the extras subdirectory. There are two manuals supplied as fairly short text files. They are both easy to follow and explain how to go about recompiling the sources using the supplied tools and also which additional programs are needed. There are two ways to compile. One makes use of a pointer driven GUI created by Wolfgang Lenerz called SMSQEmake. The other uses small SBASIC programs located in the source code directories. The SMSQEmake manual explains how to use the supplied SMSQEmake program. The other manual shows how to use the basic programs supplied in each of the target directories to recompile. Whichever way the sources are compiled the sources need to be located on DEV8_. In addition the supplied make job (which is a diferent job from SMSQEmake), linker job and assembler need to be loaded as resident programs. Finally a concatenator program which is called cctf needs to be in the prog_use path and if you are remaking smsqe for a QXL a small program called cct is also needed and also needs to be in the program use path.

The pointer and menu driven front end created by Wolfgang Lenerz called SMSQEmake is located in the exe subdirectory of the extras directory as are the other supplied tools including the linker, concatenator and make programs. The recommended compiler is QMAC 1.00 or higher. From messages on the ql-users list on the web it also appears that the latest version of George Gwilt's compiler GWASS may be used. This I have not tried yet.



For a first attempt the easiest way to compile appears to be to use the SMSQEmake program. This article will therefore concentrate on using this and on recompiling for the Qx0 as this is the only native hardware that I have available, although the differences between creating smsqe for the Q60 or SuperGoldCard or any other native hardware simply comes down to selecting the correct target machine on the SMSQEmake GUI.

Before starting the SMSQEmake program the correct environment needs to be created. If the sources are located in a directory on win1_ called smq_ the following SBASIC commands need to be made :

```
DEV_USE 8,win1_smq_ : makes the DEV device

PROG_USE win1_smq_extras_exe_: creates the correct prog_use path

ERT HOT_RES ('z',win1_smq_extras_exe_make)  : sets up the compiler,
ERT HOT_REMV('z')                           : make and linker as
                                            : resident programs.
ERT HOT_RES ('z',win1_smq_extras_exe_linker): the hot key 'z' is
                                            : discarded as each
ERT HOT_REMV('z')                           : is loaded as it itself
                                            : is not needed

ERT HOT_RES ('z',win1_QMAC)
ERT HOT_REMV('z')
```

And as SMSQEmake uses an additional toolkit called OUTPTR_BIN which is also supplied.

```
LRESPR      ('win1_smq_extras_exe_source_
outptr_bin')
```

And as the make program uses the Qlib error trapping extensions

```
LRESPR ('win1_‹directory›qlib_ext')
```

The only resources that the user needs to provide for themselves are QMAC and the qlib_ext toolkit. Now that the system has been set up for compilation all that remains to be done is to launch the SMSQEmake program from the win1_smq_extras_exe directory.

Once started this program opens a GUI. The GUI contains the usual extended environment buttons to move, resize and close the window. In addition it contains buttons to select the type of smsqe that is to be made. These buttons are labelled, Generic, Atari, Goldcard, Q40/Q60, and QXL. To assemble the complete sources from scratch for a given machine the generic button and the machine specific button need to be selected. When the buttons are selected a list of file appears in the window beneath the buttons. The generic button adds common files for all machines to the list of files to be assembled, the other buttons add machine specific files. Next select the All buttons on the GUI to indicate that all files are to be recompiled, then select the make button and finally click on OK to start the process. The compilation process took approximately 20 minutes on a Q60.

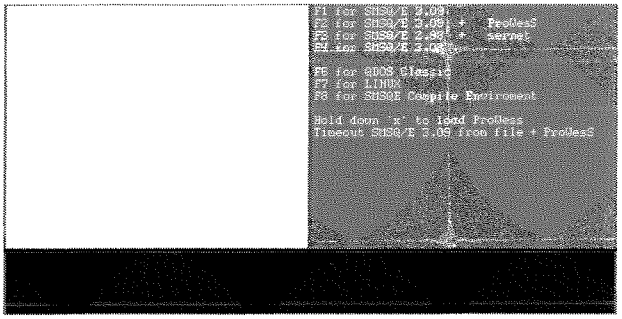
The first time I tried to compile I hit problems with the SMSQEmake program and with the make program. Make needed the qlib_ext toolkit LRESPRed but this was not mentioned in the documentation, while SMSQEmake had an odd bug that caused it to crash if its window was moved under very specific conditions. Neither problem made it impossible to compile and these problems have now been fixed by Wolfgang Lenerz.

Once I had got the qlib_ext toolkit LRESPRed and had learned not to move the SMSQEmake program's window and tried to compile the make program threw up a error in compilation and compilation failed. It was difficult to spot in which file the error had occurred as the default window for the make program is small and file names and error messages scroll rapidly across it. Fortunately the compilation process produces log files in each subdirectory containing files used in that process. A search through these showed which file had produced the error. An examination of the source file showed that a label had been corrupted during the unzipping of the files. Only one character had been changed to a non printable character so that it was easy to correct this with QD. Once this was fixed the sources compiled correctly and produced the new q40_rom containing smsqe 3.09.

Before this was used in anger it seemed prudent to configure it with the settings that were normally used. This was accomplished with menu_config by asking this program to update the q40_rom configuration. Secondly a boot menu was required to provide the option of getting back to the previous version of smsqe was also needed just in case the new version caused problems.

As the Q60 can run QDOS classic or SMSQ/E or Linux and also has a base version of SMSQ/E in its rom (2.98) my usual boot file already has a timed menu loop allowing selection of operating system or default system. The loop scans for keypresses for 15 seconds and then launches in to a default boot mode. The new 3.09 smsqe rom was added to this menu leaving the other options including the default as before so that if the new rom did not work as expected a quick reset of the Q60 would boot back into a usable system to study what went wrong.
A section of the boot which makes the menu is listed below:

```
1240 timeout=DATE
1250 timeout=timeout+15
1260 REPeat lp
```




```
1650 END SELect
1660 IF DATE› timeout
1670    OPEN_NEW#3,"Win1_DoProWess":CLOSE#3
1680    key=0:IF PEEKS$(2,3)‹› 'RES':LRESPR
        "Win1_SMQ_smsq_q40_rom":EXIT lp :
        REMark latest ROM 3.09 & ProWesS
1690 END IF
1700 END REPeat lp
1710 :
```

However no problems ocurred. The home compiled 3.09 smsqe has now been in use on my machine for 4 weeks. Nothing untoward has happened using this new version of smsqe except that some of my home made programs stopped working properly. One of which was ClipScrapBoard. A quick investigation showed that the problem was not in smsqe but in one of the tests these programs used to decide which machine they were running on. One test involved checking the size of the extended channel definition block for SBASIC channel #0. This had been 304 bytes from the introduction of the extended environment up to smsqe version 3.03 which was the last version I had used before 3.09. Sometime between 3.03 and 3.09 the size of this block had jumped to 432 bytes. A small adjustment to the affected programs and all was well.

Since this article was originally written smsqe 3.10 has been released. I am now running this version of smsqe having compiled it from the sources using the procedures described above. I also had one new difficulty which again seems to have been the result of unzip not doing exactly as it should. The sources compiled without reported errors but initially the final smsqe code would not initialise and run correctly when LRESPRed at boot up. Examination of the code showed that the structure of the initial segment did not look at all like that of the previous version. To get the sources to compile correctly required the removal of the _log and _err and _rel files from the directory containing the initialisation code for smsqe for the q40 and to reunzip and overwrite the source files there. Once that was done the code compiled correctly and I have a 3.10 rom which has been in use for 4 days so far with no problems identified. It therefore appears to be that unzip with such a large and complex file as the smsqe sources sometimes does not get it right even when it does not produce any warning messages.
In addition a tool to check the integrity of the newly compiled version of smsqe would be helpful especially if it could identify the likely location of the problem and which of the sources file directories needs to be checked. This would be particularly useful as the error messages produced by the compilation process may not identify all errors and can be difficult to follow due to numbers of messages scrolling on the make programs report window.
In summary, compiling smsqe from the sources with the tools supplied on a Qx0 was not in the end too difficult although there were problems to sort out. The programs used in the process were unzip, menu_config, QCDEZE, QD, ACP, TGBak, QMAC, SMSQEmake, make, linker and cctl. The last 4 were all supplied with the sources.

Oooops - already 56 pages!
It seems the summer issue is quite full, thanks to you, and the fact that we spread over three months this time! The current issue will be the thickest ever, as far as I remember - even two articles have to wait until next issue! Please keep writing for us to ensure the next issue will be as good as this one! - Editor

QL-QUBES: A 3D Memory Game

by Stephen Poole

Programming games such as draughts where you play against the computer can be very difficult, and my best attempt so far has only been successful with 'noughts and crosses'. There is a second sort of game based on randomness which presents no particular skill to program, and finally a third type, such as 'Simon' which simply uses Human Memory to simplify program writing.

Whilst experimenting with diagonal projections, I realised I could develop a simple 3-D Simon-like program for 1 or 2 players, or to play against the invincible QL! So here it is:

The principle of the game is that the screen shows a diagonal projection of a 2x2, 4x4, 6x6 or 8x8 chessboard, on which each player takes a turn to place a black (or White) token. But as the game is in '3D', you can place your tokens on any square of the right colour, or on any token you have already positioned. In this way you gradually fill up the board to form a 4x4x4 cube, (for example), and if you have placed the most tokens correctly, you win. Now here comes the rub: If you choose carefully how to pile up your tokens, you can hide away your partner's pieces as you go, forcing him to remember by heart the board's configuration in 3D! Thats not too difficult on a 2x2 board, (8 combinations), but gets absolutely horrendous on an 8x8 board, (512 possibilities). Furthermore, if you choose a 'handicap' of randomly-placed pieces at start-up, you are forced to make mistakes until you have deduced the board's actual configuration....

When you run the game you are at first asked to choose what configurations you want. At first just hit 'ENTER' each time for the '[defaults]', which will give a demonstration of the computer playing itself, and also show you how it fills the board with 3D-tokens. (Thereafter, the screen is blanked so that redrawing the screen does not give away any clues as to the positions of hidden tokens). Thanks are due to the TURBO team for the blanking procedure which comes with the compiler and which I have modified somewhat so as to make it into a two-way switch.

When you decide to play against somebody, or the QL, you are shown who's move it is, and you must enter the token position in terms of x, y & z, being successively from left to right, from front to back, and from bottom to top. (This configuration suits my way of programming 3D-axes, as it preserves standard maths 2D 'x & y' dispositions). Before continuing inputting, choices can be validated by selecting a [Y]es or No reply so you can have second thoughts at any stage. When you choose an invalid token position, (and believe me you will!), the QL burps, you loose your turn, and get one point deducted. The winner is he who has been the least burped at. One way of improving your score is to take great care when mentally situating diagonally projected squares. If you simply estimate using glimpses of square colours you will soon come unstuck, because as you will see, squares are not always where you expect them to be, (due to perspective overlap).

As previously stated, it is you who does the mentally hard work, not the QL, which simply cheats by keeping a permanent tally in an array and selecting from that configuration randomly for its move. Ah! how playing against an infallible adversary can be belittling! (Have any of you tried pitting your wits against Tim Hartnell's 'Psychoanalyst' program DOCTOR ELIZA in his book 'Exploring Artificial Intelligence on your Sinclair QL'? It almost drives you crazy as it successively pinpoints all your weaknesses, even though it is just trying to help you.... Oh! for the charm of a mere mortal error-prone human being as an adversary. As previously mentioned, programming QL_Qubes was easy as the principles used are straightforward, because the QL as an opponent has to do very little brainwork. The 'skill' in the program comes from the fact that it is Homo Sapiens that has all the memorisation to do, because the board uses pseudo-3D graphics, and that is easy to code.

To get familiarised with the user interface, first practise on the (dead) easy 2x2 board. The 8x8 board is only for masochists and other suchlike people who adore becoming infuriated. Even a 4x4 board can be quite absorbing. Of course the game is best with two players as then both need to exert their skills and ruses to the utmost. In two-player mode the game requires considerable strategy and the obvious tactics are not necessarily the best. I will say no more, as after playing once or twice you will see that the game is very easy to get used to.

So I hope you enjoy playing it as much as I enjoyed coding it. If you are feeling at all frustrated by 1-player mode, you are welcome to add code to randomise the QL's responses to reduce its invulnerability. This would take but a few lines of superbasic once you have studied the listing. (So I will leave that little exercise up to you).

I would like to take this opportunity of thanking Bruno Coativy who served as beta-tester, (a polite

way of saying guinea-pig), and who found a minor irritating bug in a seldom visited corner of the program and who also made some helpful comments and suggestions, such as that players should not choose a maximum handicap, as that way the game is immediately over!

```
110 REMark QL_QUBES_bas by S.Poole, v16jan94, v7mar05.
120 REMark LRUN under QDOS or EXEC under SMSQ.
130 REMark [Default] values are between square brackets. (Just hit Enter).
140  CLEAR: start: STOP
150 :
160 DEFine PROCedure start
170  OPEN#1,con_512x256a0x0_128: BORDER 0: PAPER 2: CLS
180  DIM d%(512,12), T%(8,8,9), b%(8,8,8), ct(1), hz(1), c$(1,5)
190  c$(0)='BLACK': c$(1)='WHITE': ct(0)=512: ct(1)=512: f$=FILL$(' ',8)
200  IF NOT MAIN: CLS
210 END DEFine start
220 :
230 DEFine FuNction MAIN
240  REPeat game
250     IF NOT INIT: EXIT game: ELSE IF hcp: VIDEO (pl=0): VIDEO refresh
260     REPeat loop: IF SET_POS: vd=refresh: ELSE EXIT loop
270  END REPeat game: RETurn 0
280 END DEFine MAIN
290 :
300 DEFine FuNction SET_POS
310  s$='   '
320  REPeat posit
330     ik=7*kl: INK ik: heading: ug=0: hm=0
340     IF pl: hm=1: IF (pl<2)*kl: hm=0
350     IF hm: mv=human: ELSE mv=computer
360     IF mv: EXIT posit: ELSE kl=NOT kl: NEXT posit
370  END REPeat posit
380  :
390  c0=ct(0): c1=ct(1): IF (ug AND (1=(c0+c1))): RETurn 1
400  IF ((NOT((1=c0)OR(1=c1)))AND((0=c0)OR(0=c1))) THEN
410     winner: i$=INKEY$(#1,-1) : RETurn 0
420  END IF
430  kl=NOT kl: RETurn 1
440 END DEFine SET_POS
450 :
460 DEFine PROCedure winner
470  AT 0,0: CLS 3
480  FOR h=1 TO 4: AT h,0: PRINT;'       ';
490  VIDEO (pl=0): VIDEO refresh
500  FOR i=0 TO 255 STEP 8: BEEP 32766,i: i$=INKEY$(#1,2)
510  AT 0,0: CLS 3: INK 0: PRINT;'B:'!ct(0),: INK 7: PRINT;'W:'!ct(1)
520 END DEFine winner
530 :
540 DEFine PROCedure heading
550  i$=INKEY$(#1,200): AT 0,0: CLS 3
560  FOR h=1 TO 4: AT h,0: PRINT ' '!!!s$
570  AT 0,0: PRINT;c$(kl)&' PLAYS: Score:'!!
580  INK 0: PRINT;'B:';ct(0)!!: INK 7: PRINT;'W:';ct(1): INK ik
590 END DEFine heading
600 :
610 DEFine FuNction computer
620  r=n-1: none=NOT pl
630  REPeat h
640     x=1+RND(r): y=1+RND(r): ikk=T%(x,y,9): IF none: ikk=(ik=ikk)
650     IF ikk: FOR Z=1 TO n: IF NOT b%(x,y,Z): EXIT h
660  END REPeat h
670  x$=x: y$=y: z$=Z: b%(x,y,Z)=1: ct(kl)=ct(kl)-1: RETurn 1
680 END DEFine computer
690 :
700 DEFine FuNction human
710  REPeat inputs
720     FOR i=1 TO 4: AT i,0: PRINT;f$;
730     REPeat r1: AT 1,0: INPUT ('x:')!x$!(s$): IF OK(x$): x=x$: EXIT r1
740     REPeat r2: AT 2,0: INPUT ('y:')!y$!(s$): IF OK(y$): y=y$: EXIT r2
750     REPeat r3: AT 3,0: INPUT ('z:')!z$!(s$): IF OK(z$): Z=z$: EXIT r3
760     AT 4,0: INPUT ('[Y] N')!o$!(s$): IF o$=='n': NEXT inputs: ELSE EXIT inputs
770  END REPeat inputs
780  :
790  IF (1=b%(x,y,Z)) OR (0=b%(x,y,Z-1)): BEEP 16384,0,255,128,8,0: ug=0: RETurn 0
```

```
800  IF (ik=T%(x,y,9)) THEN
810     kk=kl
820     ELSE FOR h=64 TO 0 STEP -1: BEEP 1234,h: END FOR h: kk=NOT kl: ug=1
830  END IF
840  b%(x,y,Z)=1: ct(kk)=ct(kk)-1: RETurn 1
850 END DEFine human
860 :
870 DEFine FuNction OK(in$)
880  IF in$='': BEEP 123,4: RETurn 0
890  FOR j=1 TO LEN(in$): so=in$(j) INSTR '123456789': IF NOT so: ELSE EXIT j
900  IF NOT so: BEEP 123,4: RETurn 0
910  IF in$>n : BEEP 123,4: RETurn 0
920  RETurn 1
930 END DEFine OK
940 :
950 DEFine FuNction refresh
960  DIM d%(mx,12): g=0
970  FOR y=y$ TO 1 STEP -1
980      zz=0: i=8-y: IF i=-1: i=2
990      :
1000      FOR x=x$ TO n
1010          FOR Z=z$ TO n: IF b%(x,y,Z): zz=Z: ELSE EXIT Z
1020          IF zz THEN
1030             g=g+1:d%(g,1)=T%(x,y,1): d%(g,2)=T%(x,y,2)
1040             d%(g,3)=T%(x,y,3): d%(g,4)=T%(x,y,4)
1050             Q=(z$*2)-2: d%(g,5)=Q+T%(x,y,5): d%(g,6)=Q+T%(x,y,6)
1060             Q=(zz*2)-2: d%(g,7)=Q+T%(x,y,7): d%(g,8)=Q+T%(x,y,8)
1070             d%(g,9)=T%(x,y,9): d%(g,10)=i: d%(g,11)=z$: d%(g,12)=zz: zz=0
1080          END IF
1090      END FOR x
1100  END FOR y
1110  VIDEO (pl=0): PLOT: VIDEO 1: RETurn 1
1120 END DEFine refresh
1130 :
1140 DEFine PROCedure PLOT
1150  FOR p=1 TO g
1160      x1=d%(p,1): x2=d%(p,2): x3=d%(p,3): x4=d%(p,4): i=d%(p,10): z$=d%(p,11)
1170      y1=d%(p,5): y2=d%(p,6): y3=d%(p,7): y4=d%(p,8): ik=d%(p,9): zz=d%(p,12)
1180      INK ik: FILL 1: LINE x3,y1 TO x4,y2 TO x4,y4 , x2,y4 TO x1,y3 TO x1,y1
1190      FILL 0: INK ik+4: LINE x4,y4 TO x2,y4 TO x1,y3 TO x3,y3 TO x4,y4
1200      LINE TO x4,y2, x3,y1 TO x3,y3, x1,y3 TO x1,y1
1210      FOR j=z$ TO zz: LINE x1,y1 TO x3,y1 TO x4,y2: y1=y1+2: y2=y2+2
1220  END FOR p
1230 END DEFine PLOT
1240 :
1250 DEFine FuNction INIT
1260  INK 7: FILL 0: CSIZE 1,0: RANDOMISE DATE
1270  REPeat LP
1280     PAPER 0: INK 7: CLS: PRINT;' QL QUBES, by S.Poole, v7mar2005'\\
1290     pr0$=" Hit ENTER for [default]       "
1300     pr1$=" Want to play again ? [Y] N    "
1310     Pr2$=" How many   Players ? [0] 1 2  "
1320     Pr3$=" Difficulty Level   ? 2 [4] 6 8"
1330     pr4$=" Random Handicap    ? [0] to "
1340     pr6$=" Above answers OK   ? [Y] N    "
1350     :
1360     PRINT pr0$\\
1370     INPUT(pr1$)!i$    : IF i$=='n' : RETurn 0
1380     INPUT(Pr2$)!i$    : pl=0: IF i$='1': pl=1: END IF : IF i$='2': pl=2
1390     :
1400     REPeat L
1410        INPUT(Pr3$)!i$
1420        IF check(3): NEXT L: ELSE n=i$: kl=0: mx=n^3: nn=mx/2: EXIT L
1430     END REPeat L
1440     :
1450     REPeat L: INPUT(pr4$&nn)!s$: IF check(4): NEXT L: ELSE hcp=s$: EXIT L
1460     INPUT(pr6$)!o$
1470     IF o$=='n' THEN
1480        CLS: NEXT LP
1490       ELSE
1500        WINDOW 512,256,0,0: CLS
1510        i$=INKEY$(#1,20): EXIT LP
1520     END IF
1530  END REPeat LP
```

```
1540  :
1550  SELect n: =2: SCALE 8,2,0: =4: SCALE 16,2,0: =6: SCALE 22,2,0: =8: SCALE 28,2,0
1560  DIM d%(mx,12), T%(n,n,9), b%(n,n,n), ct(1), hz(1), c$(1,5): x$=1: y$=1: z$=1
1570  c$(0)='BLACK': c$(1)='WHITE': ct(0)=nn: ct(1)=nn: f$=FILL$(' ',8)
1580  RETurn tiles
1590 END DEFine INIT
1600 :
1610 DEFine FuNction check(ck)
1620  SELect ck
1630     =3: IF i$='': i$=4: END IF : IF NOT i$ INSTR '2468': RETurn 1
1640     =4: IF s$='': s$=0
1650         FOR hh=1 TO LEN(s$): IF s$(hh) INSTR '0123456789': ELSE RETurn 1
1660         IF s$›nn: RETurn 1
1670  END SELect : RETurn 0
1680 END DEFine check
1690 :
1700 DEFine FuNction tiles
1710  PAPER 4: CLS: Xc=0: ik=0
1720  FOR y=y$ TO n
1730      y1=y: y2=y1+1: y3=y1+2: y4=y1+3
1740      :
1750      FOR x=x$ TO n
1760          INK ik: x1=Xc+x*3: x2=x1+2: x3=x1+2: x3=x1+3: x4=x1+5
1770          T%(x,y,1)=x1: T%(x,y,2)=x2: T%(x,y,3)=x3: T%(x,y,4)=x4
1780          T%(x,y,5)=y1: T%(x,y,6)=y2: T%(x,y,7)=y3: T%(x,y,8)=y4
1790          T%(x,y,9)=ik: ik=7*NOT ik: b%(x,y,0)=1
1800          FILL 1: LINE x1,y1 TO x2,y2, x4,y2 TO x3,y1: FILL 0
1810      END FOR x: Xc=Xc+2: ik=7*NOT ik
1820  END FOR y: IF hcp: set_handicaps
1830  FILL 0: y$=n: RETurn 1
1840 END DEFine tiles
1850 :
1860 DEFine PROCedure set_handicaps
1870  r=n-1
1880  REPeat hzd
1890     x=RND(r)+1: y=RND(r)+1: i=T%(x,y,9)/7
1900     IF hcp=hz(i): : IF hz(NOT(i))=hcp: EXIT hzd: ELSE NEXT hzd
1910     FOR Z=1 TO n
1920         IF NOT b%(x,y,Z): b%(x,y,Z)=1: ct(i)=ct(i)-1: hz(i)=hz(i)+1: EXIT Z
1930     END FOR Z
1940 END REPeat hzd
1950 END DEFine set_handicaps
1960 :
1970 REMark Modified   TURBO_TK_DEMOS Routine :
1980 REMark With Full Acknowledgements to Digital Precision Ltd.
1990 :
2000 DEFine PROCedure VIDEO(vdu)
2010  IF vdu : PK=PEEK(163892): ELSE PK=2
2020  POKE 98403,PK
2030 END DEFine VIDEO
2040 ::
```

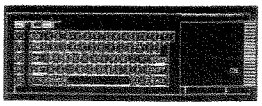
Byts of Wood

by Roy Wood

Far from it being me in a tizzy over printers it would seem to be Simon Goodwin who has a bee in his bonnet. Dilwyn and Jochen sent me a copy of the piece that Simon provided for this issue so I could reply. Jochen seemed to feel that he was being a little unfriendly in this piece but I am sure that it is just the way that Simon writes and we have never had any problems when we have met. It is true, though, that our preferences as to computing styles do lie on different axis.

I thought I had laid to rest the idea that I thought you had to buy an expensive printer to get output from a QDOS/SMSQ system. In fact, now the QPC2 users have QPCPrint that is a thing of the past. Any printer will work. In fact if I read the manual correctly any QL emulator running under windows can use it with a minimal amount of juggling. What I was saying when I reviewed the EPSON EPL6200 and in my previous Byts of Wood columns, was that this printer works very well and gives a good crisp output.

QUANTA



Independent QL Users Group

World-wide Membership is by subscription only,
offering the following benefits:
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Tel. +44 (0) 161 865 2872
or
Visit the Quanta Web Site
http://www.quanta.org.uk
E-mail: membership@quanta.org.uk

Let's CELEBRATE QL is 21

WORKSHOP & BIRTHDAY DINNER PARTY
at IBIS Hotel, Portsmouth, Hants.
Workshop including Demonstrations, Talks and Traders etc.
Non-QLer's Programme visiting Places of Interest
Saturday & Sunday October 29th & 30th 2005
Full information from Quanta Secretary

BOOK NOW!

Now it is good news that you can get a Tally T0114 printer for £70.49 although you can, actually pick up a HP Laserjet 1010 for around the same price. The thing you have to think about more carefully when you buy a printer is not what it costs to actually buy the thing but what the consumables cost and how many pages you get to a cartridge. The 6000 page cartridges for the EPSON cost around £70, the 2000 page toner for the HP 1010 costs around £40 pounds and the Tally one weighs in at a hefty £85. I was unable to find a quote for the number of pages it would print for this. It is often the way that you can get cheap printers and the consumables are priced sky high. This is a typical con because you buy the printer once and the consumables often.

Now I do know that you can buy cloned consumables and I am sure there will be many of you out there saying 'Oh I never buy the branded ones because they are so expensive'. This cuts both ways. I have used clones myself. The ones Jochen used to sell were absolutely fine but I have also seen clogged heads due to over high concentrations of water in the inks and a local hospice bought a very expensive colour laser printer and the used cloned laser cartridges, one of which leaked filling the inside or the printer with red powder and costing more than the printer cost to get it repaired. It is a lottery.

Output or Putout?

Finally I would comment on the printed result. Yes ProWesS does have a HP printer driver but it is not 100% reliable for all HP printers - or at least it was not when I tried it on several printers at Tony Firshman's house some years ago. I have not tried it since. The other Epson advantage in LINEDesign is the colour replacement drivers. These are pretty useful if you have an Epson ESC/P2 compatible printer. Fine for inkjets but colour lasers that support these drivers are still too expensive. There are no equivalents for any other printer system.

Peter Cranfield did offer me a superb Text 87 HP printer driver a while back but never finished the project.

In the beta test version he sent me there were sample printouts which were very good and the drivers had many more features than that available for the EPSON one. The HP drivers provided by Text 87 are for 24 pin dot matrix printers. They work on a Laser but the output is not so good and they lack the range of fonts that the EPSON ESC/P2 ones have.

I will admit that there are other QL programs that can support and print using HP printer drivers and that is very good. If these are the programs you use in preference to the ones I have mentioned here then your choice of printers will be slanted in a different direction.

My final word on this is to say that few of you out there will be buying a printer solely for use with your QL or QL emulator. Those that do should weigh it up carefully and, above all, look into the consumables. If you intend to use it for you PC as well then find a compromise that suits all uses. As I said previously, we do not have the resources to buy and test lots of printers. If I buy one I want it to work on both platforms so that is why I bought the EPSON and why I reviewed it for you. I have no shares in EPSON and their C80 was a dismal failure with QL software on my PCs.

Printer Technology advances in leaps and bounds and the printed output from some of the low end printers is much better than that from some of the high end printers of 5 years ago. This extended technology is all well and good if you can actually use it. QPCPrint will give QL/Windows emulator users access to a lot of this - what we need now is the same kind of thing for the Black Box and other users. And Talking of old computers.....

And an Apple a Day...

Interestingly enough a couple of weeks ago my next door neighbour came to see me and said his printer had died. I said I would pick one up for him. Now he has an iBook - you know these, the Mac notebook that looks like and overgrown version of Barbie's make up box. He only uses this to produce invoices and send emails so he did not need anything expensive.

I did not pay too much attention to the O/S and just had a quick look at work to see if any of our cheaper printers had Mac drivers. I got him a Canon iP1500 which is cheap but quite usable. I then found this did not support anything lower than OS 9! This computer is a lot younger than the QL but the O/S is no longer supported.

I then checked all the current printers on the Canon website and they all do not support the older Mac O/S. The Epson printers have two drivers. A 'Classic Mac' driver (but no indication of what this supports) and a OS X driver.

It seems that we are not the only ones left high and dry by lack of printer support. I solved his problem by selling him a second hand printer that did work.

One more Printed Word

During the course of my day job I get a a lot of computer literature across my desk. On the whole, especially in the PC area, is is more hyperbole than information but one little piece of information jumped off the page at me. One of the new range of printers has, at its heart, a Coldfire processor. Now, if we could get Marcel to write a version of SMSQ/E for..... (tee hee just kidding Marcel)

2 CPU

One other press release that intrigued me in recent weeks came from Intel. Intel have long published 'road maps' which seek to map out the company's plans for future developments. For the last few years Intel have firmly espoused the cause of faster and faster CPUs with more complex and integrated cores. It seemed to scorn the efforts of AMD towards 64 bit and dual core processing. Recently, however, it did a swift U turn and concepts of 5 to 10GHz processors were ushered into the shadows as it announced its new dual core Pentium processors.

Interestingly enough I can recall both Stuart Honeyball and Nasta exhorting the use of dual processing many years ago. Dual processing is not a new idea. Server systems have been using dual CPUs for many years and, in recent years, AMD Opterons have even been used in quad CPU formations but these were all specialised systems with dedicated purposes, mainly used to serve several users at once.

It is only in the last year that Intels Hyperthreaded CPUs have made an appearance on the home computing scene and only with the new Pentium D and AMD processors that true dual processing has been within the reach of the desktop user.

Seems that Stuart and Nasta were years ahead of their time - no surprise there then.

Support Your Black Box?

The QUANTA survey of QL-Users threw up the interesting results that many people were still using old un-expanded or slightly expanded QLs and many of these had microdrives as a main system storage device. This is somewhat surprising and, in some ways, disappointing.

It does remind me of something Jonathan Hudson once said at a Hove show some 5 years ago. He said 'I do all this work and then I come to a show and what do I see? I am not surrounded by expanded systems with Super Gold Cards, or people using emulators running the latest software. I just see old QLs.' That, in some ways, was a contributing factor in his departure from the QL scene (along with a deep seated dislike of SMSQ/E).

The conclusion drawn from this was that the Quanta magazine was not supporting these users in any meaningful way. That, however, is something we should think about a little more carefully. How exactly are we we supposed to support these people? If they have not upgraded their hardware in the last twenty years what is it they need support with? I would imagine they know much more about the software they are using than I do. Now If Quanta is suggesting that we should be moving these people onto better hardware and software I would agree - with some reservations. Sometimes, when you get people to move onto newer systems than they have been used to all you do is to double their problems. I know this because I have done it.

During the 10 years that QBranch has been in existence I have often suggested that customers upgrade or move over onto other software but for every group of satisfied recipients of this advice there has been the odd person who has become more confused or found that he just could not get to grips with the new system.

How Do you Move The Immovable?

Now it may be that the people who are still using the old QL in its pristine form have no use of expansion but I know that that is not the case. The moment I plugged a Disk Drive into my QL I felt an appreciable increase in power and that was only in the storage access department. Plugging a Gold Card into my QL felt like like a whole new computer and a Super Gold Card/Qubide/RomdisQ/superHemes machine is a revelation in power when compared to the old QL.

I was similarly elated with the Q40 when I first got it doing something useful - i.e. the first really working SMSQ/E arrived in my inbox. So how can we give this experience to the users who still have only a QL? Persuade them to come along to a workshop, explain that more colours are not just window dressing but vital aids to productivity, Show them how the newer software will do so much more than Quill, Abacus, Archive and Easel? I suppose these are a start but it is hard to convince someone to expand a QL when they can see the shiny PC experience in their local computer store. The ads look fine but the learning experience is so much steeper.

I am really interested in the answer to this and I think we should all be because the future of the QL rests on it. Do let us know what you think.

Bugs!

Duncan Neithercut wrote to me: I always read your bit in QLToday first, its always about innovation. I saw two of your clients had a problem with QCDEZE and the QDT CDrom. You have found a new way of getting software support. You could have got help quicker if you had emailed me. Did you check which version(s) of QCDEZE was being used.

Some of the early versions did not open QXL.win files. The last publicly released version was 1.12 and is on Dilwyn's site. It had a fix for large cluster sizes thrown up by the QLToday CDROM. Someone used exceptionally large clusters when burning that CD, was it you? Brian Kemmett was in touch with me in 2003 and the last version I have a record of sending him was 1.11.

If they are both using 1.12 I am happy to look at the QDT CD and identify the problem with the QXL.win file. So if you want to support any future Qx0 clients just send me a copy and I will look at it.

As for the name shortening, sorry but you only have Bill Gates to blame for that one as you must have used a PC to burn the CD. The names on the ISO9660 part of the CD are short due to DOS short file name conventions, directories are not part of the file name in DOS. If you had burnt it on an Amiga there would be no problems with filename length. I only got my head around Windows LFNs last year when I wrote my FAT16 CFcard programme, so its not part of QCDEZE. It was no fun and I would need to be paid money to put it in.

Apology

Now I must apologise for this. I had no intention of disparaging Duncan's unique and very efficient work. I was under the impression that he had been contacted about this by the people who had the problems in the first place and I only got the information just before I wrote the column so I had little time to check it out. I did want to let the users know that there were potential problems with the disk and I was hoping to get others, who had problems with it, to speak up so it could be looked into.

DilWyndows

A recent comment on the user group list prompted the concept of a version of Windows written especially for Dilwyn. As you can see we named this Dilwyndows. The features below are mostly those suggested by Darren Brannagh:

1. Has a SwanseaD ROm Drive
1. Only runs in MODE 4 colours - Green and red mainly, as per welsh flag.
2. Plays "What's New Pussycat?" by Tom Jones (no relation) while loading.
3. Has a choice of sheep or leeks as a wallpaper theme.
4. Has an LWPM (large Welshman protection mode) in which the keyboard and mouse don't work (only way to prevent Dil doing any damage)
5. Has dual processor/motherboard functionality - one intel/AMD and one 68xxx, so if Dil buggers up the Intel part, he can switch to 68xxx mode.
6. Has Welsh language Icons and helllp fillles (by defaulllllt)
7. Has in-built, anti-virus protection called "know-leeks 1.0"
8. Supports a new graphic file format, similar to GIF and TIFF, called CarDIFF
9. The error sound is a sheep going "baaaaaa"
10. The hardware spec insists that the case is eqipped with an airbag for when Dilwyn throws it out of the window.
11. The keboard has two letter 'L's on each side and a spare one in the middle in case he wears the others out.
12. Comes with a range of C. Pughs

I collated the above list before I learned that Dilwyn had decided to resign the post of editor that he has held for the last 9 years. I shall be sorry to see him go. He has been a good editor and performed his task unstintingly and with a great deal of dedication. Above all he has been the brunt of a large number of jokes and jibes such as that above and not only taken it in good stead, but often returned the thrust with a bucket of good humour. I hope that this does not mean that he will be leaving the QL scene altogether.

On the brighter side Geoff Wicks has agreed to take over the post. Geoff is someone for whom I have a great deal of respect too and he has a fiery quality and dedication which will be a great asset to the magazine. I look forward to his stewardship.

QL IS 21

QUANTA

FIVE YEARS AFTER OUR LAST INTERNATIONAL EVENT QUANTA RETURNS TO PORTSMOUTH FOR A CELEBRATION OF THE QL's AND OUR OWN 21ST ANNIVERSARY

DATE AND VENUE

QL is 21 will be held on **29th/30th October 2005** at the **Ibis Hotel, Winston Churchill Avenue, Portsmouth, PO1 2LX, United Kingdom.** The show will run from 10.00 to 17.00 on Sat. 29th with a celebratory dinner in the evening. On the Sun. 30th the formal programme will run from 10.00 to about 13.00.

ACTIVITIES

Quanta is planning activities to suit all levels of QL-use from simple black box to the latest technologies. Organiser of the activity programme is Geoff Wicks. We are also planning a programme for non-QL-er visitors. This will be organised by Sarah Gilpin. QL is 21 could be a weekend for the whole family.

HOTEL BOOKINGS

There is adequate accommodation at a reasonable price at the Ibis Hotel for anyone requiring an overnight stay. **Please book by telephone using the number +44(0)2392 - 640000** and not by other means. State that you will be attending the **"QL is 21 Computer Conference".** Please inform Roy Brereton, the General Organiser of QL is 21, of your booking.

BY CAR

From the M27 turn off at junction 12 onto the M275. Follow the signs to the city centre, sea front and then Guild Hall. The hotel is located in Winston Churchill Avenue. Please note you cannot turn right into the hotel from this dual carriageway. You must drive past the hotel until the first roundabout and then return on the other carriageway.

PUBLIC TRANSPORT

Portsmouth and Southsea station is 5 - 10 minutes walk from the Ibis Hotel. Turn left on leaving the station and then left again. Go under the railway bridge and turn left into Isambard Brunel Road. Go under a block of flats and walk to the end of this road. To the right on Winston Churchill Avenue you will see the Ibis Hotel on the left hand side.

AIR AND SEA

Portsmouth is readily accessible from Heathrow and Gatwick airports and there is also a regional airport at Southampton with flights to many destinations on the continent and in the UK. Portsmouth is a ferry port with services to the continent. Further information on our website.

Visit our website for detailed information: *http:/members.lycos.co.uk/geoffwicks/qlis21.htm*
Geoff Wicks, 56 Peveril Crescent, West Hallam, Derbyshire, DE7 6ND, United Kingdom.
Tel: +44(0)115 - 930 3713 Email: gwicks@beeb.net

The QL Show Agenda

SURREY QUANTA SUB-GROUP AND LONDON QL AND QUANTA GROUP PRESENT

BYFLEET 2005 QUANTA WORKSHOP

ON SUNDAY 25 SEPTEMBER 2005, FROM 10AM TO 4 PM

Byfleet 2005 Quanta Workshop (UK)

25th of Sept. 2005,
10:00 to 16:00

...we have printed the information for you as provided by Ken Bain.

This year the London Group and the Surrey Group are combining their annual shows into Byfleet 2005.

Byfleet is just inside M25, between jns 10 & 11, and the Hall is just South of A245.

From M25, jn11;go East towards Weybridge, then turn right (South) onto A318 and follow it to Brooklands (now a business park), then through the old racetrack, turning right onto A245, Turn left at second roundabout, left at little roundabout, and Hall is on right.

From M25, jn10;take A3 towards London, left onto A245 towards Woking at next junction, (Painshill). After A318 joins, turn left at second roundabout - see above. (Or you can take the earlier left fork into Byfleet, go right at first small roundabout and left at the next, by the green.)

From A3, either direction; leave at Painshill junction with A245 Cobham/Woking - head for Woking.

By train;Byfleet & New Haw is on the Waterloo Woking line. It's 12 to 15 mins walk. Don't go through Brooklands - carry on down the old road, across the A245, and on to the green, then turn right.

Free Parking, and all the usual attractions. If that isn't enough, Brooklands Museum (aircraft and motor racing) is just up the B374: or there's a Bus Collection on the A245 to Cobham: or the RHS Gardens at Wisley (RHS Membership needed on Sundays).

Up-to-date informtion with a link to more maps, is on www.sadeye.co.uk.
Or call Malcolm Cadman, 020 8691 5780, ql(at)mcad.demon.co.uk
or Ken Bain, 01932 347 432 (to 1am) kenbbb(at)ntlworld.com

Regular QL Meeting - (NL) Eindhoven

Saturday, 15th of October, 10:00 to 16:00
Pleincollege St. Joris, Roostenlaan 296

J-M-S will be at the show, as usual.

"QL is 21" Show - The Event 2005

Sat./Sun., 29th and 30th of October 2005
All details can be found on the reverse page!

We expect everybody to be at the show!

US-Show 2005

We have not received any updates yet,
but we will keep you up-to-date as soon as we know more.
So the information printed in the last issue is all we have.
We received an email, however, saying that Al Boehm is recovering. Best wishes, and hope to meet you soon!